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ICONES ORCHIDACEARUM

Fascicle 9

THE GENUS EPIDENDRUM

Part 6

"Species New & Old in Epidendrum"

Eric Hágsater

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ICONES ORCHIDACEARUM

Fascicle 9, plates 901 to 1000

THE GENUS *EPIDENDRUM*
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Reference Map

TROPICAL AMERICA
(numbers refer to the portions of the map used in individual plates)



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ICONES ORCHIDACEARUM

Fascicle 9, plates 901 to 1000

THE GENUS *EPIDENDRUM*
Part 6

Species New & Old in *Epidendrum*
Foreword

With this sixth part of The Genus *Epidendrum*, we present a further 22 new species, as well as 78 old species, some of which are fully illustrated for the first time.

It is interesting to note that *Epidendrum cuneatum* Schltr., originally described from Bolivia and generally misunderstood, is more widespread in its range of distribution, including Peru and Ecuador, and had been described several times as *Oerstedella,* which was recently sunk into *Epidendrum*. *Epidendrum cancanae*, originally described in *Oerstedella*, mainly due to the sheaths of the stem, is now placed in the Aggregatum Group.

In preparing the Flora Mesoamericana several undescribed species have come to light and are therefore recognized, in groups that were thought to have been well studied. Such is the case of the Epidanthus Group (*E. astroselaginella* and *stenosellaginella*), the Neowilliamsia Group (*E. bicuniculatum, E. dwyerioides*, and *E. sphenostele*), the Secundum Group (*E. apatotylosum*), and the Phragmites Group (*E. tripetalum*). Two South American species of the Lanium Group surfaced: *E. flexuoecallosum* and the new combination *E. ciliipetalum*.

A long misunderstood species, which we originally obtained in Medellín, Colombia, *E. aenigmaticum* has finally been recognized as a new species of the Alpicolum Group from southern Ecuador. Among those species often misunderstood and rarely illustrated is *E. serrulatum* from Cuba and Jamaica. A rediscovery is *E. serruliferum*, a poorly understood species in the Nanodes Group, is presented together with other Mesoamerican species of the group. *Epidendrum rhombicapitellatum* is a further new species from the Capitellatum Group. There are a couple of news species of the Diothonea Group: *E. caesaris* from Venezuela and Colombia, and *E. sigmodiothonaeum* from Peru.

Several other Peruvian new species are included, following a visit to the Universidad Mayor de San Marcos in Lima, and close collaboration with local botanists which in this volume include Delsy Trujillo, Gloria Calatayud and Ricardo Fernández. These include *E. ferreyrae*, and *E. gloria-imperatrix* and *E. stictoglossum*.

Finally, as in the previous volume, due to the long lists of specimens seen and other records, we have been obliged to transfer them in many cases to an Appendix. We feel it will be helpful for curators and botanists to have a full understanding of the material which we have seen and identified. Localities have been reduced, and only the last name of the first collector is given.

We wish to thank Dr. Jerzy Rzedowski for translating the Latin diagnosis, and Dr. Oscar Francke for reading the final manuscripts and his helpful corrections and suggestions.

Eric Hágsater
Mexico City, January, 2007

EPIDENDRUM ADNATUM Ames & C.Schweinf.

OTHER SPECIMENS: COSTA RICA: Without locality data, *Endres 159*, W 10545! W 31368! W 43672! W 43673! **Alajuela:** Bosque Eterno de Los Niños, 1100 m, 19 IV 1990, *Bello 2181*, INB! MO! Reserva Biológica Alberto Brenes, 900 m, 3 VI 1995, *Blanco 283*, USJ x2! El Silencio de San Ramón, 950 m, 9 X 1922, *Brenes 328*, AMES! CR! Bois de La Palma de San Ramón, 1200-1500 m, 17 VII 1925, *Brenes 1344* (*142*), AMES! Los Angeles de San Ramón, 1030 m, 11 VI 1926, *Brenes (14)1495*, CR! F! El Silencio de San Ramón, 1000 m, 10 X 1922, *Brenes 2874*, NY! Los Angeles de San Ramón, 30 I 1925, *Brenes 3281*, NY! Los Angeles Norte, San Ramón, 900 m, 27 III 1982, *Carvajal 61*, MO! Reserva Forestal, San Ramón, 1350-1500 m, 18 II 1983, *Carvajal 344*, MO! SEL! Reserva Forestal de San Ramón, 1220 m, 10 V 1993, *Dombeck s.n.*, USJ! Caña Chica, 1250-1550 m, 25 III 1983, *Dressler sub Hágsater 7181*, AMO! (Illustration voucher.) Reserva Forestal de San Ramón, 1000 m, 20 VII 1997, *González 1999*, USJ x2! S of Balsa, 1200 m, 25 IV 1983, *Liesner 14990*, CAS! MEXU! MO! SEL! Reserva Forestal Arenal, 1080 m, *Obando 108*, CR! Quebrada Volio, 900-1000 m, 29 VIII 1979, *Stevens 13712*, MO! río La Balsa, 850 m, 29 XII 1974, *Taylor 17834*, NY! US! Balsa de San Ramón, 550 -1150 m, 8 VIII 1975, *Utley 2817*, F! **Cartago:** Tapantí, 1300-1700 m, 22 X 1983, *Chacón 1437*, CR! MO! Ibid. 1200 m, IX 1937, *Valerio 2395*, AMES! **Guanacaste:** Río San Lorenzo, 1050 m, 26 VII 1995, *Rodríguez 327*, MO! **Heredia:** Vara Blanca de Sarapiquí, 1615 m, VIII 1937, *Skutch 3259*, AMES! SEL! **Limón:** Los Angeles, 1300 m, 22 II 1990, *Chacón 756*, MO! **San José:** P. N. Braulio Carrillo, 700-750 m, 16 II 1984, *Chase 84212-A*, CR x2! Zurquí Station, 1650 m, 11 XII 1990, *Ingram 773*, AMO! MO! SEL! **PANAMÁ: Chiriquí:** Fortuna Lake, 1100-1135 m, 8 III 1985, *Croat 60034*, MO! **Coclé:** Cerro Pajita 1200 m, 2 I 1947, *Allen 3943*, AMES! G! US! El Valle, 1000 m, 6 III 1976, *Dressler 749*, SEL! Alto Calvario, 700-850 m, 2 VII 1977, *Folsom 4101*, MO! Alto Calvario, 700-850 m, 3 X 1977, *Folsom 5738*, MO! Cerro Gaital, 900-1000 m, 30 V 1982, *Knapp 5327*, F! MO! Cerro Gaital, ca. 1100 m, 24 VII 1983, *Miller 787*, MO!

EPIDENDRUM ALBERTII Schltr.

OTHER SPECIMENS: COSTA RICA: Without locality, *Epidendrum* No. 26, *Endres 186*, W 10519! **Alajuela:** Los Angeles de San Ramón, 1050 m, 11 VI 1926, *Brenes (10)1491*, AMES! CR! El Silencio, 11 VI 1938, *Smith H759*, AMES! **Cartago:** Tapantí, 1300 m, 26 XII 1984, *Dressler 194*, USJ! Río Grande de Orosí 1350-1400 m, 2 X 1983, *Hágsater 6928*, AMO! (Illustration voucher) **PANAMÁ: Chiriquí:** Fortuna Dam, 1200-1300 m, 22 VI 1987, *Croat 66623*, MO! **COLOMBIA: Chocó:** Carmen de Atrato, 1600 m, 1 XII 1974, *Ortíz Valdivieso 667*, HPUJ! **ECUADOR: Esmeraldas:** Lita, 750 m, 26 VIII 1987, *Dodson 17311*, RPSC! Ibid. *Dodson 17313*, MO! **Pichincha:** Santo Domingo, ca. 1000 m, 20 III 1994, *Carnevali 3363*, CICY! Mindo, 1100 m, 12 II 1997, *Clark 3923*, QCNE! SEL! Old road to Quito via Chiriboga km 84-88, 1200-1350 m, 8 VII 1979, *Dodson 7789*, AAU! SEL! Dos Ríos, 1350 m, 23 IX 1987, *Dodson 17287*, MO! SW of Chiriboga, 1350-1400 m, 8 VII 1979, *Løjtnant 15685*, AAU!
OTHER RECORDS: COSTA RICA: Without locality, *Epidendrum* No. 26, *Endres 186*, Illustration, W 36519! **COLOMBIA: Chocó:** Carmen de Atrato, 1600 m, 1 XII 1974, *Ortíz Valdivieso 667*, xerox of illustration, AMO! **ECUADOR: Esmeraldas:** Lita, *Dodson 16878* sub *Hágsater 9755*, spirit, AMO! **Pichincha:** San Miguel de los Bancos, 913 m, *Gerlach s.n.*, digital photo, AMO! Los Bancos, 800 m, *Tobar 349*, digital photo, AMO! Ibid. *Tobar 451*, digital photo, AMO! Hort. Cumbayá, *Zelenko sub Hágsater 14001*, spirit and digital photo, AMO!

EPIDENDRUM ALFAROI Ames & C.Schweinf.

OTHER SPECIMENS: COSTA RICA: Without locality data, 24 IX 1959, *Lankester 1748*, SEL! Cultivado en San José, 4 X 1938, *Valerio 1082*, CR! **Alajuela**: Reserva de San Ramón, 1000 m, 20 X 1993, *Bittner 2123*, CR! Reserva Alberto Brenes, 850 m, 10 IX 1984, *Folsom 10988*, CR! Reserva de San Ramón, 800-950 m, 19 X 1985, *Gómez 10584*, CR! Ibid. 1000 m, 21 X 1993, *Herrera 6625*, CR! P. N. Braulio Carrillo 820 m, 19 XI 1990, *Ingram 738*, CR! SEL! Reserva San Ramón, 1 VIII 1992, *Mora de Retana s.n.*, USJ! San Ramón, ca. 700-800 m, 29 VIII 1979, *Stevens 13800*, AMO! CR! F! MEXU! SEL! La Virgen del Socorro, 700-900 m, 27 VIII 1978, *Todzia 409*, CR! **Cartago:** La Suiza, 1200 m, 12 VIII 1997, *Estrada 1062*, USJ! Cultivated at Las Cóncavas, 1500 m, 1 IX 1956, *Lankester s.n.*, SEL! **Heredia:** Sarapiquí, 2 IX 1968, *Davidse s.n.*, USJ! San Jerónimo, ca. 1800 m, 18 IX 1979, *Luer 4209*, SEL! Limón: Alto Urén, 1190 m, 26 VII 1989, *Herrera 3356*, CR! MO! entre Río Sukut y Río Carbri, 700 m, 14 VII 1989, *Solís 23*, AMO x3! **Puntarenas:** Monteverde, *Atwood s.n.*, USJ! Volcán de Buenos Aires, 450 m, 8 VIII 1984, *Hágsater 6916*, AMO! (Illustration voucher.) CR! USJ! **PANAMÁ: Bocas del Toro:** Fortuna Dam, 1000 m, 5 II 1984, *Churchill 4604*, MO! **Chiriquí:** Fortuna dam, 1000-1200 m, 13 VIII 1976, *Dressler 5343*, AMO x3! **COLOMBIA: Antioquia:** Parque Natural Las Orquídeas, 1380 m, 26 III 1996, *Cogollo 2617*, AMO! JAUM!
OTHER RECORDS: COSTA RICA: Heredia: Sarapiquí, *Davidse s.n.*, 31 VIII 1968, Illustration by *R. L. Rodríguez 630*, Xerox AMO!

EPIDENDRUM ALLENII L.O.Williams

OTHER SPECIMENS: COSTA RICA: Alajuela: Cariblanco, 800 m, 10 XI 1977, *Gómez 3311*, USJ! **Heredia:** Cariblanco, ca. 600 m, 16 VI 1992, *Blanco 1482*, USJ! Cariblanco, 16 VI 1992, *Mora de Retana s.n.*, USJ! La Virgen del Socorro, 700-900 m, 27 VIII 1978, *Todzia 411*, CR! **PANAMÁ:** Without data, *Dressler 3056*, Herb. Dressler! **Chiriquí:** Fortuna dam, 1100 m, 18 IX 1984, *Churchill 6045*, MO! Fortuna [dam], ca. 1200 m, 22 III 1978, *Hammel 2187*, MO! presa Fortuna, 18 II 1976, *Mendoza 139*, F! MO! Fortuna Dam, 1050-1100 m, 10 XI 1980, *Sytsma 2194*, AMO! MO! **Coclé:** La Mesa, 1000 m, 21 I 1941, *Allen 2310*, AMES! Alto Calvario, 900 m, 14 I 1977, *Folsom 1281*, MO! Ibid. 850 m, 19 V 1977, *Folsom 3287*, MO! La Mesa, 2 X 1982, *Hágsater 6408*, AMO! (Illustration voucher.) above El Valle, 1000 m, 2 IX 1977, *Luer 1111*, SEL! Mesa, 900 m 5 XII 1983, *Luer 9254*, SEL! El Copé, 720-800 m, 31 VIII 1988, *McPherson 12867*, MO! **Veraguas:** Cerro Tute, 800-1350 m, 5 VI 1982, *Knapp 5432*, MO!
OTHER RECORDS: COSTA RICA: Heredia: Virgen del Socorro, 16 VI 1992, photographed 16 VII 1998, *Pupulin 924*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 283, San José, C.R., Editorial de la Universidad de Costa Rica. **PANAMÁ: Coclé:** La Mesa, *Hágsater 6408*, slide, AMO!

EPIDENDRUM ANGUSTISSIMUM Lindl.

OTHER SPECIMENS: COLOMBIA: Cauca: Valle de las Papas, 2910 m, 11 XI 1953, *Idrobo 3736*, COL! NY! P! (Illustration AMO!) Paletará, 2950 m, 31 VII 1980, *Lozano 3547*, COL! F! Pan de Azucar, 3300 m, 16 VI 1922, *Pennell 7025*, AMES(x2)! K! NY! US! Ibid., *7026*, pro parte, AMES! **Quindio:** Nevado del Quindio, 3300-3400 m, 20 V 1989, *Luteyn 13010*, COL! NY! **Tolima:** Páramo de Ruiz, 3400-3600 m, 16 XII 1917, *Pennell 3085*, NY! (Illustration voucher). **Valle del Cauca:** Páramo de Bavaya, 3600 m, 16 III 1946, *Cuatrecasas 20037*, F! US! Páramo Las Hermosas, 3200, 25 IX 1987, *Devia 1954*, COL! MO! **ECUADOR: Carchi:** Estación Biológica Guandera, 3550 m, 13 I 2001, *Alvarez 2864*, QCA! Julio Andrade-Palestina, 3300 m, 27 XII 1980, *Holm-Nielsen 29674*, AAU! Laguna Pasocucha, 3600 m, 9 XI 1993, *Palacios 11885*, QCA! **Napo:** Antisana, *Alfredo Bernard* S! Papallacta, 3250 m, II 1934, *Heinrichs 618*, G! M! Z! Papallacta, 3400 m, I 1984, *Hirtz 1511*, AMO! COL! CUVC! MO! QCNE! Papallacta, 3400-3600 m, 5 VI 1973, *Holm-Nielsen 6780*, AAU! Papallacta, *Lehmann 516*, G(x2)! LE! US! W! Papallacta, *Mille 180*, US! Papallacta, 3600m 26 III 1967 *Sparre 15024*, S(x2)! **Pichincha:** Rumiñahui, 3870-3900 m, 17 XI 1990, *Cerón 12320*, MO! Rumiñahui, 15 XI 1920, *Holmgren 961* AMES! BM! G! K! SEL! US! Rumiñahui, *Jameson 638*, LE! Pasochoa, 3500-3650 m, 17 XI 1979, *Jaramillo 1582*, AAU! QCA! QCNE! Cerro

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EPIDENDRUM ANOGLOSSOIDES Ames & C.Schweinf.

OTHER SPECIMENS: COSTA RICA: Ciudad Colón, 6 VI 1987, *Vargas 10*, USJ! **Alajuela:** Zapote, 1575 m, 4 VII 1938, *Smith H833*, AMES! K! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 48005*, US! **Limón:** Cerro Biricuacua, 2600 m, 6 IV 1993, *Herrera 6233*, AMO x2! **Heredia:** Porrosati, 2200-2400 m, 22 VI 1968, *Burger 6084*, CR! F! Zurquí Station, 1650-1700 m, 18 IX 1990, *Ingram 525*, CR! Cerro Guararí, 2600 m, 9 X 1989, *Rivera 128A*, AMO x2! MO! Cerro Zurqui, 3 III 1926, *Standley 50724*, AMES! Vara Blanca, 1400-1700 m, 27 VI 1978, *Todzia 333*, CR x2! Volcan Barba, 14 VIII 1964, *Woodruff s.n.*, FLAS! **Puntarenas:** Ujarrás, 2500 m, 4 X 1989, *Chacón 471*, CR! **San José:** Zurqui Station, 1680-1750 m, *Ingram 648*, SEL! Talamanca Range, 2400 m, 2 VIII 1967, *Lent 1167*, CR! F! Madreselva, *Schmidt s.n.*, USJ! **Cartago:** Km 66.5 S of Cartago, 7 VII 1986, *Atwood 86-17*, AMO! S of Cartago, 2600 m, 5 V 1980, *Besse 1173*, SEL! Cerro de la Muerte, 2700 m, 12 V 1997, *Christ s.n.*, USJ! Cerro de la Muerte, 25 IX 1984, *Dressler 36*, USJ! El Cañon Guarco, 2400-2500 m, 13 III 1981, *Hágsater 6461*, AMO x3! (Illustration voucher, flowers in spirit) CR! Villa Mills, 2700 m, 15 I 1990, *Merz 660*, CR! **PANAMÁ: Chiriquí:** Cerro Punta, 2300-2450 m, 7 VI 1986, *McPherson 9418*, MO! **Bocas del Toro:** Rio Colubre, 2400-2550 m, 3 III 1984, *Gómez 22373*, AMO! CR! MO!

EPIDENDRUM ANOGLOSSUM Schltr.

OTHER SPECIMENS: COSTA RICA: cultivated, 12 V 1999, *Flores s.n.*, USJ! Without data, *Smith 931*, AMES! Ibid. *Smith 1030*, AMES! Ibid. *Smith 1154*, AMES! Fila Division, 2800 m, 14 IX 1969, *Gómez 2350*, F! **Alajuela:** Volcán Poas, 2400 m, 3 III 1981, *Almeda 4672*, CAS! Palma de San Ramón, 24 VII 1944, *Brenes 39*, CR! Cerro "La Muralla", 22 VIII 1927, *Brenes (57)1639*, F! Colinas de San Pedro, 1 VI 1924, *Brenes 928*, NY! Palma de San Ramón, 8 VIII 1924, *Brenes 1014*, NY! Ibid. 1150 m, 4 VIII 1924, *Brenes 2248*, CR! F! Vulcan Poas, 2150 m, 26 IV 1930, *Cufodonti 736*, AMES! W! Volcán Barba, 7000-9000 ft, *Endres s.n.*, W 5503! Volcán Poas, *Endres s.n.*, W 31380! Volcán Barba, 2300 m, 2 VII 1983, *Givens 3120*, SEL! Peñas Blancas river, 950-1100 m, 27 VII 1986, *Haber 5810*, MO! Ibid. *Haber 5822*, MO! Zurquí Station, Rio Pará Blanco, 1500 m, 22 IX 1990, *Ingram 580*, AMO! CR! F! SEL! Poasito, ca. 2000 m, 12 IX 1979, *Luer 4130*, SEL! Ibid. 20 VI 1981, *Luer 6334*, SEL! Ibid. *Marshall 1358 sub OIC 1731*, SEL! Ibid. 2200 m, 11 V 1989, *Merz 288*, CR! Palma de San Ramón, 1 X 1936, *Quiróz 223*, CR! Ibid. *Quiróz 232*, CR! Zarcero, 5700 ft, 14 VIII 1937, *Smith 145*, F! Ibid. 6000 ft, 16 VIII 1937, *Smith 162*, AMES! F! Palmira, 2400 m, 16 V 1938, *Smith 590*, AMES! Ibid. 2400 m, *Smith 603*, AMES! Zarcero, 5700 ft, 25 XII 1937, *Smith 636*, F! Palmira, 2025 m, 27 V 1938, *Smith 673*, AMES! K! Ibid. 2200 m, 2 IX 1938, *Smith 1169*, NY! Volcan Poas, 2100-2600 m, 17 II 1924, *Standley 34642*, AMES x2! BM! P! US! Fraijanes, 1500-1700 m, 12 II 1926, *Standley 47544*, AMES! US! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 48001*, AMES! US! Ibid. 1600-1900 m, 13 II 1926, *Standley 48022*, AMES! Poasito, 2000 m, 12 IX 1979, *Todzia 697*, CR x3! Viento Fresco, 15 VI 1936, *Valerio 341*, CR! F! El Carrizal, 3 X 1935, *Valerio 1050*, CR! F! Ibid. 1 X 1935, *Valerio 1186*, F! Poasito, 2200 m, 1 V 1949, *Williams 16628*, BM! CR! **Cartago:** El Empalme, 2400 m, 22 II 1978, *Almeda 3826*, CAS! Km 66.5 S of Cartago, 7 VII 1986, *Atwood 86-13*, AMO x3! CR! F! SEL! El Tablazo, 18 IX 1935, *Brade 310*, CR! F! Empalme, 2600 m, 19 VI 1968, *Burger 5949*, F! Isla Bonita, Volcán Poas, 22 VII 1947, *DeWolf 456*, AMES! USJ! Cerro de la Muerte, 2500-3200 m, 22 VIII 1963, *Dodson 2479*, SEL! PanAm Hwy km 66, 18 VIII 1984, *Dressler 7*, USJ! El Tablazo, 25 X 1947, *Echeverría 1208*, CR! F! Ibid. *Echeverría 1340*, CR! S of Cartago, *Endres 524*, W x2! Cerro de la Muerte, 2580 m, 10 VII 1983, *Escobar 2758*, SEL! La Ventolera, near El Empalme, 2700 m, 12 IX 1969, *Gómez 2341*, F! Casa Mata, 1950 m, 13 VI 1982, *Hágsater 6344*, AMO! (Illustration voucher) CR! Cascajal, 1700 m, 6 VI 1959, *Horich s.n.*, MO! Salsipuedes, 2700 m, 5 XII 1982, *Horich 6949*, AMO x2! La Georgina, 30 V 1987, *Hurtado 15*, USJ! La Estrella, 5000-6000 ft, *Lankester 431*, AMES! Santa Clara, 1 VII 1973, *Lankester 501*, AMES! El Emplame, ca. 1900 m, 14 IX 1979, *Luer 4160*, SEL! Santa Clara de Cartago, 1950 m, 20 VII 1923, *Maxon 8123*, AMES! F! US! Reserva Biológica Tres de Junio, 2500-2600 m, 10 IV 1999, *Morales 1351*, USJ! Alto de Indias, 1900 m, 17 VI 1994, *Morales 2939*, F! La Estrella, 1 IV 1923, *Sánchez 964*, AMES! Ibid. 26 III 1924, *Standley 39313*, AMES! US! Ibid. *Standley 39575*, AMES! US! Ibid. *Standley 39587*, AMES! US! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 48013*, AMES! El Muñeco, 1400-1500 m, 6 III 1926, *Standley 51652*, AMES! Santa María, 15 V 1928, *Stork 2102*, AMES! Cerro de La Muerte, 8000 ft, 29 VI 1932, *Stork 3054*, AMES! El Tablazo, 1800 m, 27 VII 1927, *Valerio 14*, US! Ibid., Cerro Gallito, 1800-2000 m, 20 XII 1927, *Valerio 75*, AMES! Cerro de la Muerte, 2800 m, 17 V 1956, *Williams 20112*, SEL! Ibid. 2700 m, 20 V 1956, *Williams 20217*, SEL! SW of El Tejar, 2500 m, 6 II 1963, *Williams 24448*, F! **Guanacaste:** Santa Elena, 1400 m, 5 VI 1989, *Atwood 89-267*, F! Río Negro de Tilarán, 1400-1500 m, 4 X 1985, *Haber 3004*, CR! Monteverde, 1500 m, 14 VIII 1988, *Haber 8558*, AMO x3! CR! F! Santa Elena, 1540 m, 20 VIII 1988, *Haber 8597*, CR! Monteverde, 1500 m, 12 X 1989, *Haber 9549*, CR! **Heredia:** San Joaquin de Heredia, 1900 m, 1 XII 1920 m, *Brenes s.n.*, NY! Monte de la Cruz, 1700 m, 3 IX 1961, *Jiménez 206*, CR! F! Ibid. 1700 m, 8 IX 1964, *Jiménez 2302*, F! Cerro Chompipe, 2000 m, 25 VIII 1954, *Lems s.n.*, NY! Río Patria, 1800 m, 25 VII 1967, *Lent 1136*, AMES! F! Río Para Blanco, 1600 m, 10 IX 1972, *Lent 2836*, F! Monte de la Cruz, 1700 m, 30 IX 1940, *León 286*, CR! F! Cerro del Gallito, 1800 m, 20 XI 1940, *León 316*, CR! F! Vara Blanca, 1800 m, 15 IX 1979, *Luer 4185*, F! Vara Blanca, 1770 m, 1 IX 1937, *Skutch 3323*, AMES! SEL! US! Monte Cristo, 1520 m, 20 XI 1936, *Solís 469*, CR! F! MO! Ibid. 1720 m, 3 XII 1937, *Solís 546*, F! MO! Yerba Buena, NE of San Isidro, 2000 m, 22 II 1926, *Standley 49077*, AMES! US! Ibid. *Standley 49253*, AMES! Ibid. *Standley 50204*, AMES! US! Zurquí, 2000-2400 m, 3 III 1926, *Standley 50681*, AMES! US! Cerros de Zurqui, 2000-2400 m, *Standley 50719*, AMES! Ibid. *Standley 50730*, AMES! Cerro de las Lajas, 2000-2400 m, 7 III 1926, *Standley 51491*, AMES! US! Cerro de Las Caricias, 2000-2400 m, 11 III 1926, *Standley 52400*, AMES! Zurquí, 1600 m, 13 IX 1978, *Todzia 445*, CR! Monte de la Cruz, 2 VIII 1982, *Todzia 2047*, NY! Vara Blanca, 1900 m, 15 X 1970, *Walter 75458*, CR! **Limón:** Cerros Teraria, 2400-2600 m, 10 IX 1984, *Davidse 28833*, CR! MEXU! MO! SEL! **Puntarenas:** Monteverde, 1400 m, 5 VIII 1988, *Atwood 88-27*, SEL! Santa Elena, 1500 m, 6 VIII 1988, *Atwood 88-63*, F x2! SEL! Monteverde, 1450 m, 15 III 1989, *Atwood 89-78*, SEL! Cerro Dudu; 3000-3100 m, 26 III 1984, *Davidse 26070*, CR! MEXU! MO! SEL! Monteverde, 1520-1560 m, 2 VIII 1976, *Dryer 555*, CR! F! Monteverde, 1560 m, 15 VIII 1970, *Dryer 578*, CR! Monteverde, 1520-1580 m, 15 VII 1977, *Dryer 1569*, CR! F! Santa Elena-Tilarán, 16 VII 1984, *Hágsater 7078*, AMO x5! CR! USJ! Ibid. 14 VIII 1984, *Hágsater 7078*, AMO x5! Ibid. 8 VI 1984, *Hágsater 7165*, AMO! Entre Ujarrás y San José Cabécar, 1600-1900 m, 12 III 1993, *Fernández 637*, INB! Ujarrás, 2200-2500 m, 4 X 1987, *Valerio 172*, CR! **San José:** Cerro de la Muerte, ca. 2500 m, 1 V 1993, *Argedas s.n.*, USJ! El Empalme, 2600 m, 25 V 1968, *Burger 5248*, F! Ibid. 2600 m, 19 VI 1968, *Burger 5953*, CR! F! Canaan to Chirripo, 2000-2500 m, *Burger 7509*, F! MO! El Empalme, 2500-2600 m, 4 IV 1973, *Burger 9065*, AAU! CR! F! El Empalme to Villa Mills, 2700 m, 12 VII 1960, *Cruz 59*, F! Cerro de la Muerte, 2250 m, 18 V 1993, *DamSec s.n.*, USJ! San Cristobal, 5500 ft, 14 VI 1928, *Danielson 2541*, AMES! Chirripó massif, 2700-3000 m, 6 IV 1969, *Davidse 1640*, CR! SEL! Zurquí, 1730 m, 29 X 1990, *Ingram 649*, CR! SEL! San Cristobal, 1800 m, 22 VI 1981, *Luer 6380*, SEL! Mountains E of San José, 20 X 1960, *Palmer s.n.*, NY! Río Savegre, 2100 m, 9 III 1995, *Mally 91*, CAS! El Empalme, 2750 m, 29 I 1986, *Smith 1991*, CR! MO! UC! Zurquí, 2000-2500 m, 13 II 1926, *Standley 48235*, AMES! Ibid. *Standley 48237*, AMES! Ibid. *Standley 48302*, AMES! Ibid. *Standley 48320*, AMES! US! La Cima, 2600-2650 m, 30 VII 1979, *Stevens 13395*, CR x2! F! MEXU! MO! SEL! El Empalme, 2600-2700 m, 17 III 1973, *Stolze 1521*, CR! F! San Cristobal, 8000 ft, 27 V 1928, *Stork 2181*, AMES! Ibid. 5000 ft, 27 V 1928,

CONTINUED: *E. ANOGLOSSUM*

Stork 2214, AMES! El Tejar, 2000 m, 20 VIII 1967, *Taylor 4626*, NY! San Cristobal Norte, 1900 m, 8 X 1978, *Todzia 473*, CR! Cerro Zurquí, 1500-1650 m, 15 X 1974, *Utley 1273*, F! SEL x2! El Empalme, 2300-2600 m, 3 VIII 1975, *Utley 2747*, F! Villa Mills, 2500 m, 11 V 1956, *Williams 19881*, SEL! **PANAMA: Chiriquí:** Cerro Horqueta 1780 m, 2 I 1975, *Cochrane 6280*, F! MO! WIS! Ibid. 5000-5800 ft, 13 XII 1966, *Dwyer 554*, AMES! Cerro Hornito, 1300 m, 7 XII 1987, *McPherson 11835*, MO!
OTHER RECORDS: COSTA RICA: [Cartago]: Los Cartagos, *Woodruff s.n.*, 20 VII 1964, Illustration, *R. L. Rodriguez s.n.*, xerox, AMO! Ibid. 5 XI 1962, Illustration, *R. L. Rodriguez 182*, xerox, AMO!

EPIDENDRUM ASTROSELAGINELLA Hágsater & E.Santiago

OTHER SPECIMENS: COSTA RICA: Cartago: Taus Pejivalle, 650 m, 28 XI 1980, *Gómez 7307*, CR! Entre Pavones y Chitarria, Turrialba, 700 m, 15 VI 1963, *Jiménez 732*, AMES! CR x2! F! La Esperanza, Río Atirro, 850-900 m, 8 VIII 1974, *Maas 1209*, F! MO! U! **PANAMA: Veraguas:** Guabal, (Río Dos Bocas), ca. 500 m, 15 XI 1974, *Dressler 4765*, AMO! Río Dos Bocas, 15 XI 1974, *Mori 3158*, MO! Ibid. 16 XI 1974, *Mori 3175*, MO!

EPIDENDRUM BARBAE Rchb.f.

OTHER SPECIMENS: COSTA RICA: Alajuela: Monteverde, 1450-1500 m, 13 V 1976, *Dryer 78*, CR! F! Volcán Poás, 24 VIII 1996, *Estrada s.n.*, USJ! Volcán Poás, 31 VIII 1958, *Jiménez 57*, CR x2! Ibid., 2 X 1964, *Salas 2984*, USJ! **Cartago:** Ojo de Agua, 2900-3100 m, 8 XI 1961, *Cuatrecasas 26544*, F! S Tapantí, 1700-1840 m, 9 X 1986, *Grayum 7721*, MO! Río Grande de Orosí, 1300 m, 13 III 1995, *Mora 567*, MO! **Heredia:** Laguna Barva, 2780-2870 m, 10 X 1990, *Ingram 594*, AMO! F! Monte de la Cruz, 1800 m, 8 IX 1964, *Jiménez 2301*, CR! Cerro Chompipe, 2000 m, 30 I 1965, *Lems s.n.*, US! Ibid. 2200 m, 27 VIII 1997, *Mora s.n.*, USJ x2! Varablanca, 1800 m, *Ospina 1384*, AMO! Cerros de Zurquí, 2000-2400 m, 3 III 1926, *Standley 50797*, AMES! **Limón:** Cerro Kámuk, 2900-3100 m, 23 III 1984, *Davidse 25931*, MO! Valle de Silencio, 2300-2400 m, 9 IX 1984, *Davidse 28716*, MO! Tres Picos, 2400-2600 m, 10 IX 1984, *Davidse 28870*, MO! Between the Río Terbi and the Río Siní, 2400-2750 m, 13 IX 1984, *Davidse 28993*, CR! MO! SEL! **Puntarenas:** Monteverde, 1600 m, 6 V 1988, *Bello 189*, CR! Cerro Betsú, 2600 m, 6 X 1989, *Chacón 495*, AMO x2! MO! Valle de Silencio, 2000-2500 m, 7 IX 1984, *Davidse 28544*, MO! Monteverde Reserve, 1600 m, 23 IV 1986, *Haber 4469*, MO! Ibid. *Haber 4527*, MO! Ibid. *Haber 4592*, MO! Cerro Betsú, 2600 m, *Herrera 3627*, AMO! MO! Cerro Dúrika, 2800-3280 m, 10 X 1989, *Valerio 213*, USJ! **San José:** El Empalme, 2700 m, 29 VIII 1960, *Cruz 132*, AMES! F! Ibid. *Jiménez s.n.*, FLAS! Cerro de la Muerte, 19 X 1977, *Madriz s.n.*, USJ! El Cedral, 2350 m, 11 X 1993, *Morales 1703*, MO! Cerro Daser, 2500 m, 2 VIII 1983, *Pérez 689*, AMES! AMO! NY! MO! SEL! US! El Cedral, 2000 m, 1 X 19-93, *Ramírez 141*, MO x2! Poás, 9000 ft, 29 VII 1932, *Stork 3342*, AMES! MO! Cerro de la Muerte, 2600 m, 1 II 1963, *Williams 24171*, CR! F! **PANAMÁ: Bocas del Toro**: Valle del Silencio, 8 VIII 1979, *Antonio 1613*, SEL! **Chiriquí:** Cerro Punta, 2500-2600 m, 19 X 1992, *McPherson 15929*, AMO! (Illustration voucher)
OTHER RECORDS: COSTA RICA: [Alajuela:] Volcán Poás, ca. 2400 m, 20 III 1982, *Horich sub Hágsater 6693*, slide, AMO! Volcán Poás, *L. Rodriguez s.n*, xerox of Illustration, AMO!

EPIDENDRUM BILOBATUM Ames

OTHER SPECIMENS: **COSTA RICA:** Costa Rica, *Endres 219*, W! Costa Rica: *Endres 255*, W! **Alajuela**: La Palma de San Ramón, 1150 m, 30 X 1922, *Brenes 379*, AMES! CR! San Pedro de San Ramón, 18 VII 1924, *Brenes 880*, NY! La Palma de San Ramón, 3 XII 1924, *Brenes 1146*, NY! La Palma de San Ramón, 5 VII 1927, *Brenes 1633 (51)*, F! La Palma de San Ramón, 10 XI 1927, *Brenes 1649 (89)*, CR! F! San Pedro de San Ramón, 1050 m, 18 VII 1924, *Brenes 2219 (43)*, CR! **Guanacaste**: Sta. Elena, 1400 m, 39 X 1993, *Atwood 5018*, USJ! Liberia, P. N. Guanacaste, 1100 m, *Chávez 372*, CR! P. N. Guanacaste, 1100 m, 24 X 1990, *Chávez 457*, USJ! Sta. Elena-Quebrada Grande, 890 m, 26 I 1988, *Hágsater 9570*, AMO! AMES! F! INB! K! MO! SEL! US! Ibid., *Hágsater 10867*, AMO! G! S! La Tejona, 600-700 m, 25 I 1926, *Standley 45981*, AMES! US! SE of Tilarán, ca. 700 m, 27 I 1926, *Standley 46292*, US! ibid., *Standley 46325*, US! ibid., *Standley 46341*, US! Tilarán, *Hágsater 7094*, AMO! (Illustration voucher) **PUNTARENAS**: Monteverde, 1400 m, 14 III 1989, *Atwood 89-75*, SEL!

EPIDENDRUM CANDELABRUM Hágsater

OTHER SPECIMENS: COSTA RICA: Without locality, *Endres 188*, W! Arenal, 600 m, 11 VII 1923, *Valerio 135*, US! **Alajuela:** Monteverde, 900 m, 1 IX 1988, *Bello 324*, MO! Monteverde, 850 m, 2 XI 1989, *Bello 1437*, INB! Monteverde, 900 m, 21 XII 1990, *Bello 2577*, INB! La Paz de San Ramón, 1000-1025 m, 11 VI 1925, *Brenes (55) 1266*, CR! F! NY! Palma de San Ramón, 2 XI 1924, *Brenes 1132(3201)*, NY! Piedades Norte de San Ramon, 1050 m, 21 XI 1924, *Brenes 2381(390)*, CR! Monteverde, 950 m, 24 VII 1987, *Haber 7363*, MO! La Balsa, 1200 m, 25 IV 1983, *Liesner 14969*, MO! La Palma de San Ramon, *Quiroz 172(185)*, CR! Ibid. *Quiroz 242(262)*, CR! **San José:** San Jerónimo, 13 X 1984, *Dressler 83*, USJ! La Hondura, 1300-1700 m, *Standley 37729*, AMES! La Hondura, 1200-1500 m, 9 III 1926, *Standley 51908*, AMES! **Puntarenas:** Monteverde, 1500-1600 m, 6 IX 1993, *Bello 5359*, INB! MO! P. N. La Amistad, 2550 m, 15 IX 1996, *Gamboa 568*, INB! Monteverde, 1400 m, 31 VII 1986, *Haber 5787*, MO! **PANAMÁ: Veraguas:** Cerro Tute, 2500 ft, 25 III 1947, *Allen 4372*, G! NE of Santa Fé, 21 XII 1975, *Dressler 5227*, Herb. Dressler! Escuela Agricola Alto Piedra, 4-5 IX 1976, *Dressler 5432*, Herb. Dressler! Cerro Tute; 1000-1200 m, 4 II 1977, *Folsom 1602*, MO! **Coclé:** Alto Calvario, 850 m, 19 V 1977, *Folson 3319*, MO! Alto Calvario, 700-850 m, 25 XI 1977, *Folsom 6492*, MO! Cerro Pilón, 2000 ft, 27 III 1969, *Porter 4447*, MO! **Darién:** Cerro Pirre, 1200-1400 m, 15-16 VII 1977, *Dressler 5667*, Herb. Dressler! Cerro Pirre, 10-20 VII 1977, *Folsom 4448*, MO!
OTHER RECORDS: COSTA RICA: Heredia: Varablanca, 26 IV 1982, *Hágsater 6815*, AMO (Illustration voucher, flowers in spirit)! Xerox copies: ENCB! MEXU! **PANAMÁ: Veraguas:** Escuela Agricola Alto Piedra, 1 XII 1976, *Dressler 5432*, Illustration AMO! Xerox copies: ENCB! MEXU!

EPIDENDRUM CAESARIS Hágsater & E.Santiago

OTHER SPECIMENS: COLOMBIA: Boyacá: Chinavita, Mamapacha, 3000-3100 m, 26 VII 2001, *Farfán 39*, UPTC! Xerox sketch, AMO! **Cundinamarca:** Sasaima, 1780 m, 31 XII 1962, *García-Barriga 18010*, COL! **Santander:** Tona, 3160 m, 6 XI 1969, *Murillo 1225*, COL! **VENEZUELA: [Lara-Trujillo:]** Páramo de Los Nepes, 2620 m, 24 XII 1959, *Barclay 10312*, AMES! **Táchira:** Páramo de la Negra-Pregonero, 2700-2900 m, 29 VIII 1966, *Steyermark 96883*, AMES! K!
OTHER RECORDS: VENEZUELA: Trujillo: Boconó-Guaramacal, 10000 ft, XI 1961, *Dunsterville 664*, Illustration, K! Published as *E. restrepoanum* A.D.Hawkes, in Romero & Carnevali. **Mérida:** El Portachuelo, 2900 m, *Fernández s.n.*, digital photograph, AMO!

EPIDENDRUM CONGESTOIDES Ames & C.Schweinf.

OTHER SPECIMENS: GUATEMALA: Izabal: Laguna Escondida, 28 VII 1988, *Tenorio 14919*, MEXU! MO! **HONDURAS: Atlántida:** Tela, 21 III 1921, *Ames s.n.*, AMES! **Comayagua:** Minas de Oro, 4000 ft, 29 XII 1932, *Edwards 341*, AMES! **Olancho:** Río Wampú, ca. 500-700 m, 12 III 1972, *Nelson 720*, F! **NICARAGUA: Boaco:** 24 I 1970, *Atwood 3829*, MO! NY! UC! Boaco-Muy Muy, 300-400 m, 17 XII 1983, *Grijalva 3325*, MO! Cerro Alegre, 1000 m, 11 II 1983, *Moreno 20160*, MO! Río Quilan, 300-310 m, 16 VII 1978, *Stevens 9312*, MO! Cerro Mombachito, 500-900 m, 8 X 1979, *Stevens 14763*, MO! **Chontales:** Comalapa, 460 m, 19 V 1980, *Stevens 17201*, MO! Río Bizcocho-Río El Jordán, 350-550 m, 18 XII 1983, *Stevens 22602*, MO! **Matagalpa:** Macizos de Peñas Blancas, 800-1000 m, 20 I 1982, *Stevens 21289*, MO! **Zelaya [Atlántico Norte]:** Río Wawa, 5 m, 8 III 1981, *Moreno 19568*, MO! Waní, III 1983, *Ortiz 910*, MO! Waní, ca. 100 m, 13 III 1979, *Pipoly 4645*, MO! Limbaika, 8-10 m, 26 IV 1978, *Stevens 8265*, MEXU! MO! **COSTA RICA: Cartago:** Turrialba, 800-1800 m, 12 I 1882, *Lehmann 1121*, G! Pejivalle, ca. 900 m, 7 II 1926, *Standley 47035*, AMES! US! Ibid. *Standley 47299*, US! Río Turrialba, 2000 ft, 9 VI 1928, *Stork 2446*, AMES! **Guanacaste:** Tilarán, 600-650 m, 20 II 1936, *Dodge 7148*, AMES! Laguna de Arenal, 2000 ft, 13 XII 1964, *Jiménez 2713*, CR! F! NY! US! Río Sapoa, 50-300 m, 2 II 1978, *Liesner 4870*, CR! Tilarán, 500-650 m, 10-31 I 1926, *Standley 44205*, AMES! US! El Silencio, ca. 750 m, 13 I 1926, *Standley 44837*, AMES! US! El Arenal, 485-600 m, 18 I 1926, *Standley 45130*, AMES! US! Cerro Cacao, 1100 m, 11 II 1995, *Villalobos 76*, MO! Laguna de Arenal, 900-1000 m, 13 II 1963, *Williams 24563*, F! LL! US! Tilarán, 3 I 1964, *Williams 26551*, F! NY! US! **Puntarenas:** Palmar Sur de Osa, 30 m, 12 II 1951, *Allen 5873*, F!
OTHER RECORDS: GUATEMALA: Izabal: Oneida, 7 II 1931, *Lewis 30*, Illustration, AMES! **COSTA RICA: Guanacaste:** El Arenal, 590 m, 26 I 1988, *Hágsater 9467*, Illustration voucher and spirit, AMO! **Puntarenas:** Naranjito, 30 m, 14 VI 1998, *Castelfranco sub Pupulin 98*, note and xerox of Illustration, AMO!

EPIDENDRUM CONGESTUM Rolfe

OTHER SPECIMENS: COSTA RICA: Without locality, *Endres s.n.*, W 19226! Ibid. 3000-6000 ft, *Endres 298*, W 14741! **Alajuela:** Volio de San Ramón, 1035 m, 1 I 1922, *Brenes 239*, CR! Piedades de San Ramón, 1025 m, 21 XII 1924, *Brenes 760*, CR! Ibid. 23 I 1924, *Brenes 847*, CR! Ibid. 1000-1025 m, 5 VI 1925, *Brenes (41) 1252*, F! Ibid. 25 XII 1927, *Brenes 2668*, CR! Zarcero, IV 1923, *Jiménez 2054*, AMES! Ibid. 5300 ft, 17 I 1938, *Smith H169*, F! Ibid. 5500 ft, 16 IX 1937, *Smith H392*, F! Ibid. 20 II 1938, *Smith H347*, AMES! Zarcero, 1600 m, 6 II 1965, *Williams 28904*, F! NY! **Cartago:** El Tablazo, 25 X 1947, *Echeverria 1119*, CR! Las Cóncavas, 5000 ft, 13 II 1940, *F.W.H. 16581*, AMES! El Muñeco, III 1924, *Standley 33851*, AMES! F! US! Cerro de la Carpintera, 1500-1800 m, 1 II 1924, *Standley 34292*, AMES! US! Cerro de la Carpintera, 1500-1800 m, 1 II 1924, *Standley 35471*, US! Ibid. 1830 m, 1 II 1924, *Standley 35472*, AMES! Dulce Nombre, ca. 1400 m, 27 II 1924, *Standley 35795*, AMES! F! US! Río Reventado, 1460-1650 m, 26 II 1926, *Standley 49528*, AMES! US! Río Reventado, 1460-1650 m, 26 II 1926, *Standley 49566*, AMES! US! Río Reventado, 1460-1650 m, 26 II 1926, *Standley 49640*, AMES! US! La Carpintera, 5000 ft, 20 V 1930, *Stork 2065*, AMES! MO! El Tablazo, 1500 m, 2 IV 1978, *Todzia 209*, CR! F! La Carpintera, 1500 m, 30 IV 1956, *Williams 19424*, F! US! **Puntarenas:** Monteverde, 1300 m, 17 II 1989, *Atwood 88-4*, AMO! F! MO! SEL! Monteverde, 1380 m, 28 III 1989, *Boyle 25-89*, USJ! **San José:** Aserri, 1800 m, 21 III 1982, *Hágsater 6764*, AMO! Ibid. pressed cult. 3 IV 1984, *Hágsater 6764*, AMO x5! Ibid. pressed cult. 6 V 1988, *Hágsater 6764*, AMO x2! (Illustration voucher) Ibid. pressed cult. 1 V 1989, *Hágsater 6764*, AMO x4! Ibid. pressed cult. 24 III 1997, *Hágsater 11863*, AMO! El Paraíso, 1000-1200 m, 25 VI 1932, *Horich s.n.*, MO! Piedades de Puriscal, 1170 m, 1 II 1913, *Jiménez 852*, CR! La Carpintera, 1400-1600 m, 13 VIII 1995, *Morales 4739*, MO! Cerros de Puriscal, 200 m, 3 IV 1997, *Morales 6147*, MO! Aserrí, 1600-1900 m, II 1924, *Standley 34093*, AMES! F! US! Santa María de Dota, 1500-1800 m, 14 XII 1925, *Standley 42439*, US! Ibid. 1500-1800 m, 3 I 1926, *Standley 43200*, AMES! US! Ibid. 1500-1800 m, 26 XII 1925, *Standley 43402*, AMES! El Copey, 1700 m, 3 I 1926, *Standley 43999*, AMES! US! Tarbaca, 1700 m, 24 III 1938, *Valerio 2558*, AMES!
OTHER RECORDS: COSTA RICA: Without locality, *Endres s.n.*, W 11135! Ibid. *Endres 262*, Illustration, W 19224! Ibid. *Endres s.n.*, Illustration, W 36531! Ibid. *Endres 101-298*, Illustration, W 36544! Ibid. *Endres 298*, W 36717! Ibid. *Endres 298*, W 38662! Ibid. *Hágsater 6724*, spirit, AMO! **Puntarenas:** P. N. Manuel Antonio, 10 m, *Pupulin 97*, note and xerox of Illustration, AMO! **San José:** Jericó de Desamparados, 1750 m, 22 V 1994, photographed 23 II 1999, *Pupulin 1356*, color photo, in F. Pupuiin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 299.

EPIDENDRUM CUNEATUM Schltr.

OTHER SPECIMENS: ECUADOR: Morona Santiago: Cumandá, 23 VIII 1968, *Lugo 350*, GB! **Pastaza:** Mera, 1100 m, 29 I 1956, *Asplund 20527*, S! Puyo, 940 m, 10 XII 1986, *Hágsater 9064*, AMO! RPSC! Ibid. 1070 m, 10 XII 1986, *Hágsater 9076*, AMO! Mera, 1100 m, 1 XII 1958, *Harling 3460*, S! **Tunguragua:** Rio Negro, 1200 m, 16 VI 1987, *Hágsater 9105*, AMO! (Illustration voucher and flower card.)
OTHER RECORDS: ECUADOR: Azuay: Cuenca, 2400 m, received 11 VIII 2002, *Sánchez s.n.*, digital photo, AMO! **Bolivar:** Guaranda", Hort. Ecuagenera, 1500 m, 10 XI 2001, *Hirtz 7798*, slide, AMO! **Carchí:** Maldonado, 1395 m, 30 IV 1993, *Hágsater 11276*, Illustration and flower card, AMO!

EPIDENDRUM DENTIFERUM Ames & C.Schweinf.

OTHER SPECIMENS: COSTA RICA: Guanacaste: El Arenal, 485-600 m, 18 I 1926, *Standley 45068*, US! La Tejona, 600-700 m, 25 I 1926, *Standley 45988*, US! **Alajuela:** Monteverde, 800 m, 24 X 1988, *Bello 491*, CR! San Ramon, 1025 m, 14 XII 1923, *Brenes 3009*, NY! San Pedro de San Ramon, 4 I 1934, *Brenes 18863*, NY! **Cartago:** Instituto Interamericano, 21 VII 1947, *DeWolf 361*, AMES! Ibid. *DeWolf 363*, AMES! Río Pejiballe, 650 m, 28 XI 1980, *Gómez 7317*, CR! Rio Pejibaye, 750 m, 7 X 1979, *Todzia 805*, CR! **PANAMÁ: Chiriquí:** La Fortuna, 20 III 1978, *Hammel 2063*, MO! **Veraguas:** Rio Santa María, 650-750 m, 16 XI 1974, *Dressler 4857*, AMO! Rio Dos Bocas, 500 m, 30 III 1975, *Dressler 5011*, AMO! **Coclé:** El Valle de Antón, 25 VII 1964, *Dressler 2929*, AMO! La Mesa, 3 VII 1981, *Hágsater 6411*, AMO! (Illustration voucher) MEXU! **Panamá:** Cerro Campana,14 I 1972, *Dressler 4152*, AMO! **COLOMBIA: Antioquia:** P. N. "Las Orquídeas", 890 m, 1 IV 1988, *Cogollo 2897*, JAUM! MO! P. N. "Las Orquídeas", 1060-1090 m, 24 VII 1988, *Cogollo 3439*, JAUM! P. N. "Las Orquídeas", 1000 m, 24 II 1989, *Cogollo 4212*, JAUM! **Valle del Cauca:** Km 50 Cali-Buenaventura, *Dodson 3180*, F! SEL!
OTHER RECORDS: COSTA RICA: Turrialba, *Glicenstein 929*, watercolor by Rafael Lucas Rodríquez, xerox AMO! **COLOMBIA: Chocó:** Bahía Solano, *Misas 38*, Illustration by Guillermo Misas, xerox AMO!

EPIDENDRUM ENDRESII Rchb.f.

OTHER SPECIMENS: Without data, E! Ibid. W 437! **COSTA RICA: Alajuela:** Socorro de San Ramón, 1250-1300 m, 22 XII 1926, *Brenes (91)1572*, AMES! La Palma, 1250 m, 18 XI 1992, *Brenes 149*, AMES! Palmira de Alfaro Ruiz, 1800 m, 12 XII 1924, *Brenes (424)2398*, CR! La Palma de San Ramón, 1250 m, *Brenes 479*, CR! Ibid., 1250 m, 18 XI 1922, *Brenes 2938*, NY! Ibid., 5 III 1935, *Brenes 21159*, NY! Ibid. 12 II 1940, *Brenes 23041*, NY! Monteverde, 1500-1580 m, 1 IX 1977, *Dryer 1097*, CR! Ibid., 1600-1690 m, 1 XI 1977, *Dryer 1106A*, CR! F! Ibid. 1450-1500 m, 1 XII 1977, *Dryer 1723*, CR! F! Ibid., 1600-1700 m, 21 I 1988, *Haber 8031*, CR! **Cartago:** Estrella, 5500 ft, *Cooper 444*, AMES! US! Tablazo, *Endres 502*, W x6!

CONTINUED: *E. ENDRESII*

S de Casa Mata, 1950 m, 1 III 1981, pressed 11 III 1982, *Hágsater 6321*, AMO! Ibid. pressed 3 III 1982, *Hágsater 6322*, AMO! Tobosi, 2000 m, 25 I 1882, *Lehmann 1141*, BM! G x2! LE! Alto de La Estrella, 26 III 1924, *Standley 39064*, AMES! La Sierra, 2000 m, 23 I 1965, *Williams 28095*, NY! **Guanacaste:** Monteverde, 1550 m, 31 I 1989, *Haber 9050*, MO! Volcán Cacao, 1200-1600 m, 12 VII 1996, *Morales 5478*, MO! **Heredia:** Zurquí, 1600 m, 18 II 1925, *Alfaro s.n.* AMES! US! Cerros de Zurquí, 1600-1800 m, 6 II 1977, *Burger 10260*, AAU! CR! F! Ibid. 1520-1600 m, 26 XI 1929, *Dodge 6127*, AMES! E of Vara Blanca, 2060-2100 m, 21 IV 1986, *Grayum 7334*, MO! Ibid. 3 III 1974, 1900 m, *Lent 3844*, CR! F! Vara Blanca, 1860 m, 1 I 1938, *Skutch 3419*, NY! Yerba Buena, ca. 2000 m, 22 II 1926, *Standley 49119*, AMES! Ibid. *Standley 49827*, AMES! US! Ibid. *Standley 49957*, AMES! Ibid. *Standley 50104*, AMES! Cerros de Zurquí, NE of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50493*, AMES! US! Ibid. *50671*, AMES! US! Cerro de Las Caricias, 2000-2400 m, 11 III 1926, *Standley 52304*, AMES! Ibid. *Standley 52405*, AMES! Ibid. *Standley 52490*, AMES! Volcán Barba, 1750 m, 22 I 1968, *Wilbur 9877*, MO! **Puntarenas:** Monteverde, 1500 m, 9 I 1990, *Bello 1709*, MO! Monteverde, 1400 m, 29 XI 1985, *Haber 3588*, MO! Monteverde, 1600 m, 14 XII 1985, *Haber 3965*, MO! Monteverde, 1600 m, 14 I 1986, *Haber 4270*, MO! Ibid. 1600-1800 m, 28 I 1986, *Haber 4352*, MO! Ibid. 1300 m, 2 V 1986, *Haber 4570*, MO! Ibid. 1500 m, 12 III 1983, *Hágsater 7197*, AMO! (Illustration voucher) Ibid. *Hágsater 7198*, AMO! Monteverde, 4500 ft, 9 II 1959, *Palmer 29*, CR! Ibid. 9 II 1960, *Palmer s.n.*, CR! Monteverde, 1500 m, 25 I 1995, *Penneys 99*, MO! Monteverde, 1750-1840 m, 14 I 1993, *Penneys 108*, MO! **San José:** Las Nubes near Cascajal, ca. 1800 m, 8 IV 1960, *Horich s.n.*, MO! Ibid. 25 VI 1962, *Horich s.n.*, UC! Ibid. 4 VI 1968, *Horich s.n.* US! "El Chompipe", 1900 m, 9 I 1991, *Ingram 845*, CR! SEL! San Cristobal, 5500 ft, *Lankester 382*, AMES! Coronado, 1 I 1924, *Lankester 801*, AMES! San José, II 1965, *Lankester C4629*, E! San José, 28 XI 1960, *Palmer s.n.* NY! Zurquí, 2000-2500 m, 13 II 1926, *Standley 48096*, AMES! Ibid. *Standley 48113*, AMES! Ibid. *Standley 48158*, AMES! Ibid. *Standley 48202*, AMES! Ibid. *Standley 48233*, AMES! US! Ibid. *Standley 48298*, AMES! La Palma, 1 IV 1910, *Werckle 672*, CR! **PANAMA: Chiriquí:** Las Nubes, 2200 m, 27 II 1973, *Busey 687*, MO! Río Chiriquí Viejo, 2200 m, 10 IV 1984, *Churchill 5061*, MO! Cerro Punta, 2250-2400 m, 18 X 1992, *McPherson 15917*, MO!
OTHER RECORDS: Without locality, *Berliner 5106*, slide, AMO!

NOTES: In a note by Lankester (Orch. Rev. 32: 267. 1924.) it is clear that he did not intend to describe a new species, but rather referred to the species dedicated by Schlechter to Adolph Tonduz. Unfortunately he mistakenly used the family name, instead of the given name, and as at that time it was not necessary to cite a type to describe a new species, the name has been recognized as validly published. Aside from being a later synonym, it cannot be used because Schlechter also published an *Epidendrum tonduzii*, which is therefore an earlier homonym referable to *Prosthechea livida* (Lindl.) W. E. Higgins. Schlechter confused his own *E. adolphii* with *E. pumilum* Rolfe, (Repert. Spec. Nov. Regni Veg. Beih. 19: 125 and 217. 1923.) but the original description and Illustration made under the supervision of Schlechter and which we have chosen as the lectotype clearly distinguish them. The plants of *E. endresii* from around Tablazo have a nearly totally blue lip, with some white at the base; we do not consider them a distinct entity because they intergrade with the larger flowered plants with only two blue dots on the lip. One natural hybrid has been described: *Epidendrum x monteverdense* (Pupulin & Hágsater) Hágsater, as a cross with *E. exasperatum* Rchb.f.

EPIDENDRUM EPIDENDROIDES (Garay) Mora-Retana & J.García

OTHER SPECIMENS: COSTA RICA: Cartago: Río Grande de Orosí, 1500-1700 m, 23 VI 1976, *Croat 36106*, AMO! Río Grande de Orosí, 27 VIII 1967, 1600 m, *Lent 1221*, F! Tapantí, 1450 m, 22 X 1992, *Mora-Retana s.n.*, USJ 45209! Tapantí, 25 IX 1984, *Dressler & Biología 51*, USJ x3! Tapantí, 1300-1500 m, 25 IX 1996, *Sánchez 440*, AMO x2! (Illustration voucher)
OTHER RECORDS: COSTA RICA: Without data locality, *Fiske s.n*, slide, AMO! **Cartago:** Tapantí, 900 m, IX 1970, *Valerio 4*, Xerox of illustration & description, AMO!

EPIDENDRUM EROSUM Ames & C.Schweinf.

OTHER SPECIMENS: COLOMBIA: Antioquia: Yarumal, 2670-2720 m, 22 V 1983, *Escobar 2662*, SEL! Entre Urrao y Carmen de Atrato, 2440 m, 14 VIII 1993, *Escobar 5353*, AMO! Yarumal, W of El Peñol, 2420 m, 30 XI 1986, *Zarucchi 4350A*, COL! MO! SEL! **Cauca:** El Tambo, 2500 m, 25 VI 1971, *Ortiz 488*, HPUJ! **Cundinamarca:** Páramo de Chasques, 3000 m, 23 V 1951, *García-Barriga 13602*, NY! Nemocón, 2780 m, 30 XII 1962, Ibid. *17712*, COL! Guasca, 3250 m, 4 VI 1947, *Haught 5808*, US! Páramo de Guasca, 3100 m, 21 III 1948, Ibid. *6227*, US! Alto del Fan, 2600 m, 19 I 1963, *Huertas 5491*, COL! Páramo de Chingaza, 2900 m, 25 I 1961, Ibid. *5534* COL! Páramo de Guasca, 3220 m, 3 V 1972, *Cleef 3406*, SEL! U! Ibid. 3300-3500 m, 12 III 1939, *Killip 34111*, AMES! MO! NY! P! UC! US! S! Ibid. 3200 m, 03 VI 1972, *Ortiz 4196*, HPUJ! Ibid. 3200-3400 m, 24 III 1949, *Schneider 129*, NY! S! **Magdalena:** Sierra Nevada de Santa Marta, 3410 m, 20 I 1959, *Barclay 6687*, MO! Ibid. Laguna Río Frío, 3100-3250 m, 1 VIII 1972, *Forero 647*, COL! **Norte de Santander:** Alto de Santa Inéz, 2100 m, 23-24 V 1982, *Luer 7957*, SEL! **ECUADOR: Morona-Santiago**: Ave María Pass, ca. 3000 m, 3 III 1977, *Luer 1506*, SEL! (Illustration voucher). **Zamora-Chinchipe:** Loja-Zamora, beyond pass, 2500 m, 17 V 1967, *Sparre 16322*, S! Ibid. 2750 m, 19 IV 1973, *Holm-Nielsen 3983*, AAU! Ibid. 2500 m, 25 IV 1987, *Werff 9027*, QCNE!
OTHER RECORDS: COLOMBIA: Boyacá: Chinavita, Cerro Mamapacha, 3100-3300 m, 27 II 2002, *Farfán 68*, photo AMO! **Cauca:** Charcoazul, 2500 m, 25 VI 1971, *Ortiz 488*, (Illustration, HPUJ, xerox AMO!)

EPIDENDRUM FIRMUM Rchb.f.

OTHER SPECIMENS: NICARAGUA: Matagalpa: Santa Maria de Ostuma, 1600 m, 24 V 1974, *Molina 30516*, ENCB! **Rivas:** Volcán Maderas, ca. 1200 m, 19 IX 1984, *Robleto 1142*, AMO! **COSTA RICA:** La Fuente, 1200 m, 12 VII 1925, *Alfaro s.n.*, AMES! Ibid. *Alfaro 143*, AMES! US x2! Lankester Gardens, 13 VII 1986, *Atwood 86-88*, SEL! San Pedro de San Ramón, 1025-1050 m, *Brenes(2) 1215*, F! (Illustration) San Pedro de San Ramón, 1075 m, 1 IX 1921, *Brenes 78(28)*, CR! San Pedro de San Ramón, 1075 m, 8 V 1923, *Brenes 557(91)*, AMES! San Pedro de San Ramón, 1025 m, 14 XII 1923, *Brenes 746*, CR! La Palma de San Ramón, 1250 m, 26 VIII 1924, *Brenes 2277(163)*, CR! San Pedro de San Ramón, ca. 1050 m, 24 V 1925, *Brenes 2461(17)*, CR! San Ramon, 1300 m, 2 VI 1901, *Brenes 14288*, US! Roca de Dola, *Endres s.n.*, W! Las Concavas, 1 III 1924, *Lankester 793*, AMES x2! Las Concavas, 1 VII 1925, *Lankester 1003*, AMES! El General, 1160 m, 17 VII 1936, *Skutch 2855*, AMES! Carpintera, 30 VI 1923, *Stork 458*, AMES! UC! El Carmen, 1 I 1931, *Torres 344*, F! **Alajuela**: San Ramón, 3 VII 1981, *Hágsater 5599*, AMO x4! Ibid. 27 VI 1983, AMO x7! CR! San Ramon, 850-1100 m, 16 VI 1983, *Barringer 3188*, F! Piedades de San Ramón, 1050 m, 21 XI 1924, *Brenes 2381(390)*, CR! La Paz de San Ramón, 29 VI 1925, *Brenes 3316*, NY! San Ramón, 7 VI 1987, *Centeno 14*, USJ! Palmira, 2030 m, 12 VII 1983, *Escobar 2763*, SEL! Cariblanco, 15 I 1991, *Grant 91-01449*, SEL! Ibid. *Grant 91-61446*, CR! Piedades Norte, San Ramón, 14 VII 1978, 24 VII 1978, *Hágsater 600*, ENCB!, 26 VI 1980, AMO x5!, 3 VII 1981, AMO x4!, CR!, 27 VI 1983, AMO x5! Concepción, 23 VII 1981, *Hágsater 5603*, AMO x2!, CR! Piedades Norte, San Ramón, 3 VII 1981, *5604*, AMO! 27 VI 1983, AMO x5! Ibid. 26 VI 1980, *5666*, AMO x2!, 29 VI 1980, AMO x2!, 5 VII 1981, AMO x5!, 6 V 1982, AMO x6!, 23 VI 1986, AMO x4!, 4 VII 1989, AMO x4!, 25 IV 1990, AMO!, 11 V 1990, AMO x2!, 6 III 1991, AMO x2!, 10 III 1991, AMO x2!, 14 III 1991, AMO x2! Ibid. 27 VI 1983, *5666a*, AMO x5! Ibid. 27 VI 1983, *5666b*, AMO! San Ramón, 1100 m, 25 V 1997, *Rodríguez 2219*, USJ! Alfaro Ruiz, 5800 ft [1774 m],16 VIII 1937, *Smith 161*, AMES! **Cartago:** Santa Clara Martínez, 4100 ft [1254 m],19 VI 1928, *Danielson 2650*, AMES!

CONTINUED: *E. FIRMUM*

Turrialba, 600 m, 1 I 1947, *DeWolf 463*, AMES! USJ! Volio, 3000-4000 ft [918-1224 m], *Endres 145*, W! Cachí, 1280 m, 11 VII 1971, *Lent 1992*, CR! F! MO! NY! Río Birricito, 20 III 1982, *Hágsater s.n.*, AMO x5! Turrialba 3 VII 1982, *Hágsater 5633*, AMO x3!, 27 VI 1983 AMO x2! Río Birricito, 1450 m, *Hágsater 6769*, AMO (Illustration voucher). Rio Birris, 1000-1100 m, 6 VII 1959, *Horich s.n.*, AMES! 30 VI 1961, *Horich s.n.*, UC! Ibid. 1 VIII 1965, *Horich s.n.*, UC! Ibid. 1 VIII 1965, *Horich 59241*, US! La Georgina, 30 V 1987, *Hurtado 18*, USJ! Chirripo Grande, 2900 m, 25 IV 1932, *Kupper 1245*, M! Tapantí, VIII 1989, *Mora de Retana s.n.*, USJ! Cervantes, 30 VI 1967, *Rodríguez 1065*, USJ! El Muñeco, ca. 1400 m, 8 II 1924, *Standley 33738*, AMES! US! Dulce Nombre, ca. 1400 m, 27 II 1924, *Standley 35790*, AMES! US! Ibid. *Standley 35838*, AMES! F! US! Caballo Blanco, 1300 m, 6 VI 1978, *Todzia 302*, CR x2! El Muñeco, 1300-1500 m, 9 VII 1982, *Todzia 1903*, CR! NY! Muñeco, 1300-2100 m, 25 VII 1972, *Utley 348*, AAU! F! Paraíso, 4800 ft., 14 VII 1962, *Webster 12292*, AMES! F x2! U! **Guanacaste:** Volcan Rincon de la Vieja, 900-1400 m, 30 VII 1971, *Burger 7823*, CR! F! Volcán Cacao, 700-1200 m, 30 VII 1986, *Chacón 2129*, MO! Monteverde, 1500 m, 1 VI 1985, *Haber 1609*, CR! Monteverde, 1400 m, 9 VI 1986, *Haber 5051*, MO! Santa Elena, 1500 m, 30 IV 1989, *Haber 9221*, MO! Tilarán, 685 m, 25 VI 1994, *Rodríguez 261*, AMO! La Tejona, 600-700 m, 25 I 1926, *Standley 45979*, AMES! US! **Heredia:** Cariblanco, 700 m, 12 VII 1983, *Barringer 3750*, AMES! CR! F! MO! Cariblanco, 20 VII 1963, *Dodson 2462*, SEL! San José de La Montaña, 1900 m, 26 VI 1965, *Jiménez 3251*, COL! CR! F! Cerro de Las Lajas, 2000-2400 m, 7 III 1926, *Standley 51448*, AMES! US! **Puntarenas:** Monteverde, 1400 m, 5 VIII 1988, *Atwood 88-29*, SEL! Monteverde, 1350 m, 2 VI 1989, *Atwood 89-107*, F! MO! USJ! Monteverde, 1100 m, 4 VI 1993, *Fuentes 342*, AMO! Monteverde, 1400 m, 9 VI 1986, *Haber 5045*, MO! Monteverde,1500 m, 17 VII 1986, *Haber 5751*, MO! Sta. Elena, 6 VI 1983, *Hágsater 7191*, AMO x12! CR! Ibid. 15 V 1984 AMO x5! **San José:** Jericó de Desamparados, ca. 1750 m, 22 V 1993, *Morales 656*, USJ! Aserri, 1600-1900 m,12 II 1924, *Standley 34104*, AMES! US! Aserri, 1600-1900 m, 12 II 1924, *Standley 34161*, US! El Copey, 7000 ft [2142 m],19 IV 1928, *Stork 1565*, AMES! MO! **PANAMÁ: Chiriquí:** Cerro Punta, 19 I 1959, *Butcher s.n.*, AMES! Finca Hato Rey, 16 IX 1981, *Hágsater 6448*, AMO! INB! K! MO! PMA! USJ! Cuesta de Piedra, 800-1000 m, 24 IX 1984, *Hágsater 6494*, AMES! AMO! NY! P!, 16 VI 1992, AMO x2!, 14 XII 1992, AMO!, 8 X 1993, AMO! Volcán, alt. 1500 m, 18 II 1977, *Luer 1458*, SEL!

EPIDENDRUM GLORIA-IMPERATRIX Hágsater & G.Calatayud

OTHER SPECIMENS: PERU: Amazonas: Huarango, El Convento, 1400 m, 3 VII 1996, *Campos 2887*, MO! USM! **Cajamarca:** San José de Lourdes: Camaná, 1475 m, 25 VII 2000, *Calatayud 610*, CUZ! Digital image, AMO! San José de Lourdes: Crucero, 1300 m, 15 VIII 2000, *Calatayud 661*, CUZ! Digital image, AMO! Ibid. 1180 m, 15 VIII 2000, *Calatayud 663*, CUZ! Digital image, AMO!
OTHER RECORDS: PERU: Cajamarca: San José de Lourdes: Camaná, 1800 m, 25 VII 2000, *Calatayud 588*, Calatayud field notes, specimen lost. San José de Lourdes: Camaná, 1625 m, 25 VII 2000, *Calatayud 606*, Calatayud field notes, specimen lost, digital photographs, AMO!

EPIDENDRUM GONIORHACHIS Schltr.

OTHER SPECIMENS: COSTA RICA: Without locality, 1 X 1936, *Quiróz (196)=183*, CR! **Alajuela:** La Palma de San Ramón, 26 VII 1924, *Brenes 961*, NY! San Pedro de San Ramón, 1120 m, 1 XI 1922, *Brenes 2912*, NY! San Ramón, 1 I 1928, *Brenes 3433*, NY! **Cartago:** Tucurrique, without colector data, W 13626! Tapantí, 29 XI 1984, *Dressler 206*, USJ! Tapantí, ca. 1350 m, 30 IX 1984, *Grayum 3963*, MO! La Estrella, 24 VII 1925, *Lankester 1949*, BM! entre Torito y las Rocas, 1430 m, 14 VIII 1998, *Pupulin 986*, USJ! **Heredia:** Varablanca, 5 XII 1984, USJ 25561! Río Peje, 950-1150 m, 11 XI 1986, *Grayum 7795*, MO! Río Peje, 700-800 m, 14 XI 1986, *Grayum 7900*, MO! (Illustration voucher.) Cariblanco, 5 XII 1967, *Saenz s.n.*, USJ! San Jerónimo de Moravia, 30 V 1987, *Vargas 5*, USJ! **San José:** Zurquí Station, 1780 m, 13 XII 1990, *Ingram 785*, CR! INB! SEL! La Hondura, ca. 1200 m, 3 VIII 1976, *Solomon 2486*, MO!
OTHER RECORDS: COSTA RICA: Cartago: entre Torito y Las Rocas, 1430 m, 14 VIII 1998, *Pupulin 986*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 305.

EPIDENDRUM INFUNDIBULUM Hágsater & E.Santiago

OTHER SPECIMENS: PANAMA: Chiriquí: Fortuna Dam, 1370 m, 9 IV 1980, *Antonio 4120*, MO! La Fortuna, 4400 ft, 12 VII 1980, *Antonio 5197*, MO! Fortuna Dam, 1100 m, 30 VII 1984, *Churchill 5814*, MO! Presa Fortuna, 1000-1200 m, 24 IX 1976, *Correa 2638*, MO! Cerro Colorado, 800-1200 m, 15 III 1976, *Croat 33462*, MO! Cerro Colorado, 1500 m, 14 VII 1976, *Croat 37094*, MO! Bajo Chorro, 6000 ft, 14 I 1938, *Davidson 121*, MO! Cerro Colorado, 14 VIII 1977, *Folsom 4782*, MO! La Fortuna, 25 III 1978, *Hammel 2324*, MO!
OTHER RECORDS: PANAMA: Chiriquí: Cerro Colorado, *Dressler s.n.*, color slide published as *Epidanthus muscicola* (Schltr.) L.O.Williams, (Dressler 1983).

EPIDENDRUM INSULANUM Schltr.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Isla del Coco: Cocos Island, 28 II 1891, *Agassiz s.n.*, GH (AMES)! Rio Genio, 9-11 IV 1979, *Foster 4117*, F! Estación Wafer, 1-10 m, 14 VI 1994, *Lépiz 358*, INB! Cerro Iglesias, 200-250 m, 22 VI 1997, *Rojas 3660*, F! Wafer Bay, 18 IV 1930, *Svenson 335*, AMES! BKL. F! K! LE! S! UC! Cerro Iglesias, 300 m, 01 VII 2001, *Trusty 53*, AMO! (Illustration voucher). "2-3 km inland from Punta Arenas" [neighboring numbers are from Isla del Coco!], 19 I 1967, *Wiggins 166*, CAS! MO!
OTHER RECORDS: COSTA RICA: Puntarenas: Isla del Coco: 13 VII 1978, Illustration by Rafael Lucas Rodríguez based on *Miguel A. Ramírez s.n.*, xerox AMO!

EPIDENDRUM LANKESTERI Ames

OTHER SPECIMENS: COSTA RICA: Without data, *Endres s.n.*, W 13648! Ibid. *Lent 2218*, F! Monteverde, 1550-1640 m, 7 III 1986, *Almeda 5427*, CAS! **Alajuela:** Monteverde, 1400 m, 13 III 1989, *Atwood 89-69*, CR! San José de la Montaña, 2000-2100 m, 2 VII 1983, *Barringer 3432*, F! SEL! San Ramón, Reserva Río San Lorenzo, 1000-1300 m, 14 VII 1983, *Barringer 3806*, CR! Ibid. *Barringer 3808*, F! SEL! Ibid. *Barringer 3817*, F! Picada de San Antonio, 1400 m, 12 XII 1922, *Brenes 486*, AMES! Cerro de "La Muralla", 22 VIII 1927, *Brenes 1638(56)*, AMES! Monteverde, 1500-1580 m, 14 XII 1976, *Dryer 1067*, F! **Cartago:** Río Grande de Orosí, 1400-1600 m, 10 VI 1968, *Burger 5740*, F! Río Grande de Orosí, 1700 m, 6 IV 1969, *Lent 1560*, CR! F! Río Dos Amigos, 1600 m, 17 X 1971, *Lent 2199*, F! Tapantí, 1400-1700 m, 7 XII 1982, *Gómez 19275*, MO! **Heredia:** Río Vueltas, 2100 m, 23 V 1969, *Gómez 2257*, F! MO! NY! U! P. N. Braulio Carrillo, 2070 m, 2 IX 1992, *Boyle 1036*, MO! Río Las Vueltas, 1950 m, 25 VI 1972, *Lent 2643*, F x2! Alto Gallito, 21 VI 1981, *Luer 6361*, SEL! (Illustration voucher) Cerro del Las Caricias, 2000-2400 m, 11 III 1926, *Standley 52305*, AMES! Ibid. *Standley 52346*, AMES! US! Cerro Chompipe, 2100 m, 16 XII 1993, *Vargas 1635*, F! MO! **Limón:** Valle de La Estrella, 1350 m, 19 IV 1989, *Herrera 2669*, MO! Fila divisoria entre Ríos Lari y Dapari, 1900 m, 25 III 1992, *Herrera 5489*, AMO! INB! MO! **Puntarenas:** Monteverde, 1550-1600 m, 5 VIII 1988, *Atwood 88-20*, AMO! SEL x2! Monteverde, VII 1989, *Atwood 89-283*, USJ! Monteverde, 1600 m, 4 I 1985, *Haber 1196*, MO! Monteverde, 1600 m, 19 VI 1987, *Haber 7324*, MO! Ibid. *Haber 7325*, MO! **San José:** P. N. Braulio Carrillo, 1500-1600 m, 29 III 1993, *Dressler B-457*, USJ x2!

CONTINUED: *E. LANKESTERI*

OTHER RECORDS: COSTA RICA: Alajuela: A. M. Brenes Biological Reserve, ca. 1150 m, VI 1995, photographed 20 V 1998, *Carnevali s.n.*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 284.

EPIDENDRUM MISERRIMUM Rchb.f.

OTHER SPECIMENS: Amerique, without colector data, G! **NICARAGUA: Rivas:** Volcán Concepción, ca. 1500 m, 19 IV 1985, *Robleto 1958*, MO! **COSTA RICA:** Without locality, *Endres* s.n., W 142102! Without locality, *Werckle s.n.*, AMES 27882! **Alajuela:** San Pedro de San Ramon, 1075 m, 1 IX 1921, *Brenes 113*, AMES! CR! Hacienda La Constancia, 27 II 1960, *Jiménez 241*, CR! Valverde Vega, cerca de Río Agrío, 950 m, 10 V 1995, *Morales 4107*, MO! Cariblanco, 850 m, 24 IV 1956, *Williams 20262*, AMES! F! SEL! US! **Heredia:** Río Peje, 700-950 m, 10 IV 1986, *Grayum 6988*, MO! Ibid. *Grayum 6989*, MO! **Limón:** Kivut, 1400-1500 m, 10 III 1992, *Schmidt 647*, MO! **Puntarenas:** P.N. Corcovado, 745 m, 3 VIII 1990, *Herrera 4102*, MO! **San José:** San Jerónimo de Moravia, 30 V 1987, *Vargas 4*, USJ! **PANAMA: Panamá:** Cerro Campana, 27 IX 1977, *Folsom 5649*, MO! **VENEZUELA: Amazonas:** Cerro Marahuaca, 1200 m, 17 X 1988, *Liesner 24984*, MO! Ibid. *Liesner 24985*, MO! Ibid. *Liesner 25080*, MO! Sierra Parima, 1300 m, 18 V 1972, *Steyermark 105905*, AMES! NY! **Bolivar:** Cerro Impacto, 1250 m, 1 IV 1989, *Fernández 5430*, MO! Laguna de Canaima, Río Carrao, N of Auyan-tepui, 430 m, 30 V 1986, *Holst 3033*, MO! Amaruay-Tepui, 950-1100 m, 11 V 1986, *Liesner 20824*, MO! Ibid. 550-1100 m, 12 V 1986, *Liesner 20826*, MO! Ibid. 1030 m, 27 V 1986, *Liesner 21144*, MO! La Escalera, 1100 m, 19 III 1959, *Renz 9407*, RENZ! Cerro Uei, 1100 m, 20 IV 1960, *Steyermark 405*, NY! Abácapa-tepui, 1210-1600 m, 17 IV 1953, *Steyermark 75083*, AMES! Sierra Pakaraima, 1400 m, 04 V 1973, *Steyermark 95414*, AMES! Río Cuyuní, 1300-1380 m, 22 XII 1970, *Steyermark 104294*, AMES! K! US! Mount Duida, 4400 ft, VIII 1928, *Tate 840*, NY! **Sucre:** Cerro de Humo, 700-800 m, 11 VIII 1966, *Steyermark 96347*, AMES! Cerro Patao, 19 VII 1962, *Steyermark 91141*, AMES! Cerro Humo, 760-1000 m, 24 II 1980, *Steyermark 121723*, MO! **Táchira:** La Mulera, 1600 m, 11 VII 1951, *Renz 7169*, RENZ! San Cristobal, 1300 m, 02 XI 1959, *Renz 10064*, RENZ! **SURINAM:** Emma Range, Hendrik Top, 13 III 1922, *Gonggrijp s.n.*, U! Wilhelmina Gebergte, 09 VI 1926, *B.W. (Stahel 432) 7074*, U! **COLOMBIA: Antioquia:** Yarumal, 1820-1880 m, 20 V 1983, *Escobar 2629*, SEL! Ibid. 1900 m, 26 III 1996, pressed 23 V 1996, *Hágsater 11686*, AMO! Ibid. *Hágsater 11692*, AMO! Yarumal, 2700 m, 1 V 1984, *Luer 10073*, MO! Guatapé, 1900 m, 1 V 1972, *Ortíz 563*, Herb. HPUJ! "La Candelaria", 1900 m, *Ospina 71*, JAUM! **Cauca**: Cuaiquer, 1000 m, 10 VII 1880, *Lehmann 45*, W! Río Timbiquí, 300 m, VIII 1903, *Lehmann 502*, K! **Valle del Cauca:** Anchicaya, 6 II 1970, *Dressler s.n.*, Herb. Dressler! **ECUADOR: Esmeraldas:** Lita, 725 m, 20 V 1987, *Dodson 17144*, MO! Km 12-25, Lita, 800 m, *Hirtz 3609*, MO! **Pastaza:** Mera, 1400 m, 10 VI 1986, *Dalström 1017*, SEL! Mera, 1050-1300 m, 14 III 1985, *Dodson 15691*, QCA! RPSC! **CUBA:** La Guinea, IX 1859, *Wright s.n.*, K! **HAITI:** Morne Colombeau, ca. 900 m, 20 VI 1925, *Ekman 4352*, S! **DOMINICAN REPUBLIC**: Loma La Cuculata, 775 m, 10 VI 1978, *Dod 662*, Herb. DOD! SEL! **La Vega:** Reserva Científica Ebano Verde, 1300 m, 23 VI 1992, *Jiménez 503*, MO! **San Francisco de Macorís:** Loma Quita Espuela, 600-800 m, 1 V 1980, *Dod 1141*, Herb. DOD! **PUERTO RICO:** Guavate, 18 IV 1961, *Woodbury s.n.*, US 2971565! **Cayey:** Cerro La Santa, 870-890 m, 19 III 1989, *Ackerman 2568*, UPRRP! Cerro La Santa, 870 m, 5 IV 1985, *Maas 6496*, U! **Jayuya:** Cerro de Punta, 1200 m, 26 III 1980, *Liogier 30578*, NY! Cerro de Punta, 1300-1335 m, 4 X 1963, *Woodbury s.n.*, SJ 1635! **Patillas:** Quebrada Hormiga, 600-650 m, 3 XII 1988, *Meléndez 210*, UPRRP! **San Lorenzo:** Cerro La Santa, 850-900 m, 15 IV 1987, *Ackerman 2371*, UPRRP! Carite Forest Reserve, 800 m, 12 I 1986, *Axelrod 385*, UPRRP! Cerro La Santa, 880-900 m, 5 IV 1985, *Proctor 41152*, SJ! **GUADELOUPE: Basse-Terre:** Yamasse, *Duss 3720*, US! (Illustration voucher) NY! Ibid. *Duss 4161*, US! Le Soufriere, 750 m, 28 XI 1968, *Renz 10331*, RENZ! Bains Jaunes, 22 IV 1936, *Rodríguez 4759*, P! Bains Jaunes, 1080 m, 9 II 1937, *Stehlé 1358*, P! **MARTINIQUE:** Morne Calebasse, 600-700 m, 29 I 1970, *Renz 10478*, RENZ! **GRENADA:** Black forest, 1 V 1906, *Broadway 1879*, BM!
OTHER RECORDS: NICARAGUA: Jinotega: Cerro Diablo, 4150 ft, *Heller 8165*, xerox of illustration, AMO! **COLOMBIA:** [Antioquia], *Duque 273*, photo, AMO! Ibid. *510*, photo, AMO! **Antioquia:** Yarumal, 1900 m, 26 III 1996, *Hágsater 11686*, in spirit, illustration, AMO! **VENEZUELA: [Bolivar:]** La Escalera, 2500 ft, III 1959, *Dunsterville 484*, Illustration, K! **BRAZIL: Roraima**: close to the Venezuelan border, road Sta. Elena de Uairén-Boa Vista, 1982-1983, *Carnevali*, pers. comm.

EPIDENDRUM MUSCICOLUM Schltr.

OTHER SPECIMENS: COSTA RICA: Without data, *Endres s.n.*, W 31390! **Alajuela:** Río Peñas Blancas, 1400-1500 m, 27 VI 1991, *Bello 2838*, MO! La Palma de San Ramón, 1175 m, 26 IX 1924, *Brenes 1084*, NY! San Ramón, *Brenes 3432*, NY! Monteverde, 1650-1700 m, 1 XII 1977, *Dryer 1713*, F! La Palma, 1500 m, 6 V 1967, *Gómez 363*, USJ! Peñas Blancas River, 950-1100 m, 27 VII 1986, *Haber 5772*, MO! (Illustration voucher) San Ramón, 18 VI 1987, *Mora de Retana OA-13*, USJ! Los Angeles Norte, 1100 m, 6 VI 1995, *Morales 4414*, MO! Reserva Santa Elena, 1600 m, 9 VII 1994, *Penneys 89*, AMO! La Virgen del Socorro, 700-900 m, 27 VIII 1978, *Todzia 407*, CR! **Cartago:** Interamerican Hwy., 1850 m, 27 X 1993, *Atwood 4168*, USJ! Tapantí, 5 II 1979, *Croat 47030*, MO! Tapantí, 25 IX 1984, *Dressler 59 & Biología 350*, USJ! Tapantí, 1300-1800 m, 1 XI 1982, *Gómez 18804*, MO! Río Grande de Orosí, 1500-1800 m, 24 XI 1984, *Grayum 4547*, MO! Tapantí, 1400 m, 8 X 1967, *Lent 1397*, U! Tapantí, 1600 m, 17 X 1971, *Lent 2206*, MO! Tapantí, 1500 m, 28 X 1995, *Morales 4947*, MO! Estrella, 5200 ft, 22 VII 1932, *Stork 3290*, MO! San Isidro de Cartago, 1880 m, 24 VIII 1975, *Utley 2947*, NY! Río Grande de Orosí, 1600 m, 20 XII 1974, *Wilbur 18544*, MO! **Guanacaste:** Monteverde, 1540 m, 20 VIII 1988, *Haber 8600*, MO! **Heredia:** Río San Rafael, 1500 m, 12 IV 1986, *Grayum 7059*, MO! San Rafael de Vara Blanca, 2000 m, 6 XI 1986, *Herrera 224*, MO! P. N. Braulio Carrillo, 2050 m, 20 XI 1990, *Ingram 743*, SEL! (pro parte, the specimen mounted on the right) Ibid. 2000-2050 m, 5 XI 1990, *Ingram 677*, AMO x3! Vara Blanca, 2000 m, 17 XI 1992, *Morales 584*, USJ! Vara Blanca de Sarapiquí, 1860 m, 3 X 1937, *Skutch 3377*, NY! MO! S! Monte de La Cruz, 9 VIII 1967, *Weston s.n.*, USJ! **Limón:** Ujarrás, 1600 m, 4 IV 1993, *Fernández 1024*, AMO! **Puntarenas:** Monteverde, 1500 m, 6 VIII 1988, *Atwood 88-65*, MO! Monteverde, 1700-1750 m, 24 VI 1989, *Atwood 89-227*, USJ! Monteverde, 1600 m, 23 IV 1986, *Haber 4537*, MO! Ibid. 23 IV 1986, *Haber 4607*, MO! **San José:** La Palma de San Jerónimo, 1500 m, 27 V 1968, *Burger s.n.*, NY! Ibid. *Burger 5284*, BM! MO! NY! Ibid. *Burger 5484*, BM! NY! [El Empalme], 1960 m, 26 IX 1996, *García-Cruz 937*, AMO x2! Alto La Palma, 1500 m, 16 V 1995, *Zamora 2271*, MO! **PANAMA: Chiriquí:** Fortuna Dam, 1100 m, 8 II 1984, *Churchill 4868*, MO! La Fortuna, 1200-1400 m, 21 III 1978, *Hammel 2143*, MO! La Fortuna, 1300 m, 13 III 1985, *Hampshire 550*, MO! Fortuna Lake, 1200 m, 21 III 1985, *Hampshire 829*, MO! Fortuna dam, 1100 m, 9 II 1985, *van der Werff 6796*, MO!

EPIDENDRUM MYODES Rchb.f.

OTHER SPECIMENS: COSTA RICA: Without locality and collector, USJ! Ibid., *Endres 75*, AMES!, W! Aquiare, 3300 ft, VII 1922, *Lankester 364*, AMES! Rancho Flores, 2043 m, 25 II 1890, *Pittier 2158*, BR! US! Marinca, 11 V 1928, *Stork 1929*, AMES! **Alajuela:** Monteverde, 1600-1700 m, 6 XII 1989, *Atwood 4081*, AMO! San Ramón, 18 VI 1987, *Rivas 21*, USJ! Guadalupe de Zarcero, 1550 m, 20 V 1938, *Smith H643*, AMES! SEL! San Luis de Zarcero, 1550 m, 1 VI 1938, *Smith H712*, AMES! SEL! Guadalupe de Zarcero, 1500 m, 1 I 1938, *Smith H804*, AMES! **Cartago:** Dulce Nombre de Tres Rios, *Without collector*, USJ! Dulce Nombre de Tres Rios, *Beyer s.n.*, USJ! Juan Viñas, 1 VII 1933, *Brenes 202*, F! El Pizote, San Ramón de Tres Ríos, 1500 m, 19 VI 1984, *Gómez 23034*, AMO! MO! SEL! Cañón Birris, 1100, pressed 27 VI 1983, *Hágsater 6903*, AMO! Cañón del Río Birris, 1000 m, pressed 27 VI 1983, *Hágsater 6942*, AMO! Ibid. 23 VII 1984, AMO! CR! Ibid. 16 VI

CONTINUED: *E. MYODES*

1988, AMO! Ibid. 22 VI 1988, AMO x3! Ibid. 1 VII 1988, 1 VII 1988, AMO! Ibid. 1 IX 1989, AMO x8! Ibid. 18 V 1991, AMO! Ibid. 21 VI 1992, AMO x3! Ibid. 21 VI 1994, AMO x9! El Ceibo, 1100 m, 23 V 1992, *Rivera 1790*, CR! El Muñeco, ca. 1400 m, 3 II 1924, *Standley 33422*, AMES! US! El Muñeco, 1400-1500 m, 6 III 1926, *Standley 51692*, AMES! US! El Muñeco, 4200 ft, 19 VI 1928, *Stork 2672*, AMES (x2)! Rio Tiribi, 24 V 1987, *Vargas 9*, USJ! Turrialba, 23 V 1857, *Wendland 504*, W! San Gerónimo, 1 V 1921, *Werckle 53*, AMES! **Guanacaste:** Los Ayotes, 600-700 m, 21 I 1926, *Standley 45633*, AMES! Arenal, 600 m, 13 VII 1923, *Valerio 69*, US! **Heredia:** Zurquí, 1300-1500 m, 17 VII 1926, *Alfaro 273*, AMES! US! Volcán Barva, 1900-2000 m, col. 18 III 1982, pressed 22 VI 1984, *Hágsater 6753*, AMO! Ibid. 17 VII 1986, AMO! Ibid. 10 VI 1987, AMO (x2)! Ibid. 27 VII 1990, AMO! Ibid. 28 VI 1992, AMO! Volcan Barva, 2000 m, 26 V 1965, *Hatheway 1367*, CR! **Limón:** Ujarrás, 1800 m, 23 III 1993, *Herrera 6016*, AMO! **Puntarenas:** Monteverde, 950 m, 4 V 1991, *Bello 2734*, AMO! INB! MO! Monteverde, 1520-1580 m, 17 XI 1976, *Dryer 958*, CR! F! Monteverde, 1100 m, 15 VI 1993, *Fuentes 363*, AMO! San Luis river, 1000 m, 18 VI 1985, *Haber 1795*, CR! MO! SEL! Monteverde, 1000-1200 m, 18 VI 1985, *Hammel 13932*, AMO! CR! F! Cerro La Neblina, 1600 m, 16 VIII 1989, *Herrera 3436*, AMO! Las Alturas, 1280 m, 9 VII 1972, *Lent 2719*, F! Las Alturas, 1400 m, 10 VII 1972, *Lent 2735*, F! P. N. La Amistad, 1200 m, 19 VI 1990, *Soborío 48*, MO! P.N. La Amistad, 1200 m, 19 VI 1990, *Saborío 64*, AMO! **San José:** La Herradura, ca. 1000 m, 8 III 1986, *Hágsater 8185*, AMO! El General, 975 m, VII 1936, *Skutch 2683*, AMES (x2)! **PANAMA: Chiriquí:** Without locality, ca. 2100-4500 ft, *Powell 242*, AMES! MO! Ibid. 4000 ft., 1 XI 1923, *Powell 2464*, AMES! Ibid. 1 VIII 1923, *Powell 3398*, AMES! Ibid. 1 XII 1923, *Powell 3422*, AMES! Ibid. 4000 ft, *Powell 3452*, AMES! Ibid. 4000 ft, II 1924, *Powell 3505*, AMES! Bajo Mono, 5000-7000 ft, 27 VII 1947, *Allen 4789*, AMES! Bajo Chorro, 6000 ft, 12 I 1938, *Davidson 110*, F! MO! Boquete, ca. 5000 ft, 7 VIII 1967, *Dwyer 7667*, MO! Boquete, 4500 ft., 5 VIII 1960, *Ebinger 828*, US! Río Colorado, 1200-1400 m, 11 VII 1983, *Hamilton 3825*, AMO! Cuesta de Piedra, 13 X 1981, *Hágsater 6498*, AMO! (Illustration voucher, flowers in spirit) El Hato del Volcán, 1300 m, 23 VII 1975, *Mori 7405*, MO! Monte Lirio, 1300-1900 m, 27 VI 1937, *Seibert 228*, AMES! BM! NY! WIS! Boquete, 5500 ft, 24 VII 1959, *Stern 1142*, MO (x2)! Quebrada Velo, 1800 m, 8 VII 1940, *Woodson Jr. 277*, MO! Bajo Mona, 1500 m, 18 VII 1940, *Woodson Jr. 542*, MO! Ibid. *Woodson Jr. 603*, AMES! MO! Volcán de Chiriquí, ca. 1500-2000 m, 28 VI 1938, *Woodson Jr. 973*, AMES! Boquete, ca. 1300-1700 m, 8 VII 1938, *Woodson Jr. 1121*, AMES! BM! SEL! US!

EPIDENDRUM NOTABILE Schltr.

OTHER SPECIMENS: COSTA RICA: Alajuela: Monteverde, 1400-1600 m, 14 IX 1989, *Bello 1285*, INB! MO! La Palma, 1500 m, XI 1937, *Valerio 2480*, AMES! **Limón:** Ujarrás, 2200 m, 1 IV 1993, *Herrera 6144*, AMO! **San José:** Zurqui, 1600 m, 21 IX 1990, *Ingram 553*, USJ! Ibid. 1780 m, 29 X 1990, *Ingram 650*, F! SEL x2! **PANAMA: Chiriquí:** Cerro Pate Macho, ca. 1600 m, 28 II 1979, *Ackerman 1349*, SEL x6! Boquete, 5 IX 1979, *Ackerman 1376*, SEL x2! Cerro Colorado, 1400 m, 25 VII 1979, *Antonio 1434*, AMO! La Fortuna, 1200-1400 m, 21 III 1978, *Hammel 2143*, MO! Cerro Colorado, 1700 m, 15 II 1977, *Luer 1411*, SEL! Cerro Colorado, ca. 1400 m, 17 VIII 1975, *Dressler 5115*, AMO! (Illustration voucher) Cerro Colorado, 1500 m, 17 II 1977, *Folsom 1799*, AMO! MO! Cerro Colorado, 1600-1700 m, 14 VIII 1977, *Folsom 4745*, AMO! Cerro Colorado, 1400-1700 m, 24 X 1977, *Folsom 6120*, AMO! Cerro Pate Macho, 1300-1800 m, *Knapp 2053*, AMO! Cerro Colorado, 1700 m, 16 II 1977, *Luer 1439*, SEL! Cerro Colorado, 5000-5500 ft, 5 V 1975, *Mori 5965*, MO! Cerro Pate Macho, 1500-1700 m, 6 I 1983, *Stein 1202*, AMO!

EPIDENDRUM NUTANTIRHACHIS Ames & C.Schweinf.

OTHER SPECIMENS: COSTA RICA: Cartago: Cerro de la Muerte, *Aohi 6*, USJ! S of Cartago, 7 VII 1986, *Atwood 86-10*, AMO! Ibid. *Atwood 86-16*, SEL! S of Empalme, 2600 m, 4 IV 1973, Burger 9058, CR! F! Cerro de La Muerte, 2500-3200 m, 22 VIII 1963, *Dodson 2478*, SEL! Carr. Panamericana, 18 VIII 1984, *Dressler 8*, CR! USJ! El Cañon Guarco, 14 IV 1982, *Hágsater 6458*, AMO! (Illustration voucher) ENCB! MEXU! El Jaular, 1 IV 1986, *Hágsater 8402*, AMO x4! Cerro de la Muerte, 2700 m, 20 V 1956, *Williams 20184*, SEL! **Heredia:** Barva Station, 2700 m, 10 IX 1990, *Ingram 514*, F! MO! **Limón:** Ujarrás, 2600 m, 6 IV 1993, *Herrera 6226*, AMO! Cerro Asidbeta, 2698 m, 1 VI 1996, *Quesada 1584*, F! INB! MO! **Puntarenas:** Monteverde, 1400 m, 29 X 1985, *Bello 3179*, MO! Cerro Betsú, 2600 m, 6 X 1989, *Chacón 497*, AMO! F! Cerro Frantzius, 2000-2500 m, 7 IX 1984, *Davidse 28545*, MO! **San José:** S of Empalme, 2500-2600 m, 4 IV 1973, *Burger 9058*, CR! S of El Empalme, 2700 m, 28 VIII 1960, *Cruz 138*, F! Dota, Carr. Interamericana, 2800 m, 1 IX 1997, *Dressler s.n.*, USJ! Carr. Interamericana, 2800 m, 1 IX 1997, *Mora de Retana s.n.*, USJ x2! El Copey, 7500 ft, 20 IV 1928, *Stork 1651*, AMES! [carr. Panamericana], 3000 m, 8 VIII 1972, *Taylor 11814*, ILL! NY! US! **PANAMA: Chiriquí:** Cerro Punta, 2000-2300 m, 15 III 1981, *Hágsater 6469*, AMO x3! (Illustration) ENCB! MEXU! NW of Cerro Punta, 2500-2600 m, 19 X 1992, *McPherson 15932*, AMO! Cerro Pata de Macho, 1800-1950 m, 17 I 1989, *Nevers 8782*, CAS!
OTHER RECORDS: COSTA RICA: San José/Cartago: carr. Interamericana, 3000-3200 m, 27 X 1975, *Burger 16874*, flower in spirit AMO! **PANAMA: Chiriqui:** Cerro Punta, 2000-2300 m, 15 III 1981, *Hágsater 6469*, flowers in spirit AMO!

EPIDENDRUM OCTOMERIOIDES Schltr.

OTHER SPECIMENS: Without locality, cultivated at SEL, 19 I 1986, *Christenson 1093*, SEL! **HONDURAS:** Without locality, *Plowden 1*, SEL! **Atlántida:** Tela, 17 III 1923, *Ames s.n.*, AMES! **Cortés:** Santa Cruz de Yojoa, 2000 ft, 4 I 1934, *Edwards 635*, AMES x2! BM! MO! **NICARAGUA:** Without locality, *Heller 3990*, SEL! **Jinotega:** Macizos de Peñas Blancas, 1500-1650 m, *Douglas 11733*, SEL! Tuma Lake, 1000 m, 18 I 1965, *Williams 27390*, CR! **Matagalpa:** Without locality, *Fuchs sub OIC 0195*, SEL! Tuma Grande, 3900-4000 ft, *Heller 1159*, SEL! (with illustration, xerox AMO!) **Zelaya:** Waslala, 700 m, 22 XII 1982, *Moreno 19106*, AMO! SEL! **COSTA RICA:** Without locality, *Endres 358*, W! Without locality, 80 m, 29 I 1987, *Lesica 4142*, SEL! Without locality, 1 II 1981, *Mason C14352*, E! **Alajuela:** Volcán Miravalles, 1700 m, 28 XII 1985, *Catling C13.6*, SEL! Puerto Viejo, 400 m, 26 XI 1986, *Gómez-Laurito 11255*, USJ! Varablanca, 7 IV 1983, *Hágsater 6808*, AMO! (Illustration voucher.) San Pedro Curtis, ca. 75 m, 20 XII 1982, pressed 29 III 1984, *Horich sub Hágsater 6995*, AMO! Ibid. 21 II 1992, AMO x2! Ibid. 20 I 1993, AMO! CR! F! SEL! Ibid. 16 I 1996, AMO! **Cartago:** La Fuente, 1200 m, 24 XII 1925, *Alfaro 250*, AMES x2! Cataratas de Zapote, 600-650 m, 9 XII 1999, *Gómez 13312*, USJ! Río Reventazón, 560-600 m, 27 XI 1987, *Grayum 8478*, AMO! MO! Las Cóncavas, 2800-3000 ft, 28 XI 1923, *Lankester 549*, AMES x2! Las Cóncavas, 1200-1300 m, 7 XII 1925, *Standley 41509*, AMES! US! Pejivalle, 900 m, 7 II 1926, *Standley 46819*, AMES! US! Ibid. *Standley 47288*, US! **Guanacaste:** P. N. Guanacaste, 700 m, 9 XII 1990, *Ríos 271*, AMO! P. N. Vieja Colonia Blanca, 600 m, 16 I 1991, *Rivera 985*, AMO! Tilarán, 500-650 m, 10 I 1926, *Standley 44169*, AMES! US! Tilarán, 500-650 m, 10 I 1926, *Standley 44505*, AMES x2! US! Tilarán, 3 I 1964, *Williams 26526*, AMES! CR! F! **Heredia:** Río Puerto Viejo, 100 m, 5 I 1967, *Burger 4232*, AMES! CR! NY! U! P. N. Braulio Carrillo, 100 m, 22 XII 1990, *Zumbado 108*, AMO! **Puntarenas:** Palmar del Norte, 6 XI 1949, *Allen 5355*, AMES! CR! F! MO! NY! US! Rincon de Osa, 100-150 m, 16 XI 1993, *Blanco 1675*, USJ! Alto Los Mogos, 100 m, 21 X 1990, *Hammel 17921*, MO! Rincon de Osa, 100-150 m, 16 XI 1993, *Morales 755*, USJ! **San José:** San Pedro de San Ramón, 1025-1050 m, 3 I 1927, *Brenes (96) 1577*, AMES! F! Ibid. 14 XI 1927, *Brenes 120*, F! San Pedro de San Ramón, 11 XII 1927, *Brenes 1661 (120)*, CR! San Pedro de San Ramón, 1050 m, 2 XII 1922, *Brenes 1476 (274)*, CR! San Pedro de San Ramón, 1050 m, 2 XII 1925, *Brenes 294*, F! **COLOMBIA: Chocó:** Bahía Solano Ridge, 200-470 m, 25 X 1982, *Folsom 10546*, AMO!

CONTINUED: *E. OCTOMERIOIDES*

OTHER RECORDS: **COSTA RICA: Alajuela:** Varablanca, 7 IV 1983, *Hágsater 6808*, slide AMO! San Pedro Curtis, ca. 75 m, 20 XII 1982, *Horich sub Hágsater 6995*, flower card, slide and Illustration AMO! **Cartago:** Río Reventazón, 720 m, 4 XII 1965, *Founier 636*, Illustration by R.L. Rodríguez, plate 430, slide, AMO! xerox copy AMO! **PANAMA: Coclé:** Valle de Anton, 16 III 1983, *Dressler sub Hágsater 7808*, spirit AMO! **COLOMBIA: Chocó:** Bahía Solano, *Misas 46*, xerox copy of illustration AMO!

EPIDENDRUM ODONTOCHILUM Hágsater

OTHER SPECIMENS: COSTA RICA: Cerro El Humo de Pejiballe, 30 VII 1963, *Dodson 2523*, AMO Illustration! F! SEL! **Cartago:** Tapantí, 1300 m, 16 X 1992, *Atwood 4150*, USJ! En paredón, Sendero Oropéndolas, 1200 m, 29 VIII 1989, *Umaña 352*, MO! Tapantí, 1300-1700 m, 22 X 1983, *Chacón 1419*, CR! Tapantí, 23 IX 1984, *Dressler 37*, USJ! Tapantí Reserve, 1400-1700 m, 7 XII 1982, *Gómez 19211*, MO! SEL! Tapanti, ca. 1350 m, 29 VII 1984, *Grayum 3604*, MO! Rio Grande Orosi, 18 IX 1986, *Hágsater 8343*, AMO x2! Ibid. 26 IX 1986, US! Ibid. 26 IX 1986, *Hágsater 8344*, K! USJ! Rio Grande de Orosi, 1200 m, 19 I 1964, *Jiménez 1616*, CR! F! Tapantí, 1540 m, 5 IX 1967, *Lent 1252*, CR! F! Tapantí, 1200 m, 8 X 1967, *Lent 1375*, CR! F! NY! U! S of Cartago, 1620-1650 m, 21 IV 1983, *Liesner 14454*, CR! MO! Tapantí, 1200 m, 19 VIII 1974, *Maas 1374*, CR! F! MO! U! Tapanti, 20 VI 1986, *Mora de Retana 33*, USJ! Tapantí, 1300 m, 20 VIII 1992, *Morales 402*, INB! Tapantí, 1300-1400 m, 25 IX 1996, *Sánchez 402*, AMO x5! INB! Ibid. pressed 6 XII 1996, *Sánchez 421*, AMO! Tapantí, 17 III 1978, *Todzia 549*, CR! San Isidro de Cartago, 1850 m, 6 VIII 1976, *Utley 2531*, F! **PANAMA: Chiriqui:** Fortuna Dam, 1100 m, 30 VII 1984, *Churchill 5772*, MO! Fortuna dam, 1000-1200 m, 14 VIII 1976, *Dressler 5359*, AMO! Cerro Colorado, ca. 1600 m, 1 VI 1986, *Luther 1035A*, SEL! Fortuna dam, ca. 1100 m, 9 VIII 1986, *McPherson 9914*, MO! SEL! Ibid. 1100-1350 m, 7 VII 1987, *McPherson 11675*, MO! Fortuna dam, 1200-1300 m, 25 IV 1988, *McPherson 12486*, MO! **Bocas del Toro:** Cerro Colorado, 1400-1450 m, 7 VII 1988, *McPherson 12708*, MO! **Veraguas:** Cerro Tute, 1050-1150 m, 29 XI 1979, *Antonio 2899*, MO!

EPIDENDRUM OXYGLOSSUM Schltr.

OTHER SPECIMENS: COSTA RICA: Alajuela: Monteverde, 900-1300 m, 12 I 1988, *Haber 8041*, CR! **Cartago:** La Fuente, 1200 m, 14 XII 1924, *Alfaro s.n.*, AMES! US! Ibid. 22 XII 1924, AMES! US! Ibid. 25 XII 1925, *Alfaro 244*, AMES! Taus, 11 XII 1984, *Dressler 313*, USJ! Taus, 650 m, 28 XI 1960, *Gómez 7308*, CR! Tapantí, ca. 1350 m, 25 XI 1984, *Grayum 4573*, CR! Carr. Panamericana,1750 m, 28 I 1988, *Hágsater 9519*, AMO! (Illustration voucher) Tapantí, 1450 m, 4 VI 1967, *Lent 1029*, F x2! Muñeco, 1400 m, 3 V 1970, *Lent 1936*, F! Tapantí, ca. 4000 ft, 17 VI 1971, *Proctor 32424*, F! LL! MO! El Muñeco, ca. 1400 m, 8 II 1924, *Standley 33800*, US! El Muñeco, ca. 1400 m, *Standley 33890*, AMES! MICH! US! El Muñeco, 19 VI 1928, *Stork 2694*, AMES! Estrella,1700 m, 28 I 1979, *Todzia 556*, CR! El Retiro, 1400 m, 1 I 1941, *Valerio 1334*, CR! F! Ibid. *Valerio 1336*, CR! F! Tapanti, 1200 m, 2 V 1938, *Valerio 2593*, AMES! **Guanacaste:** Santa Elena, 1420 m, 26 I 1988, *Hágsater 9455*, AMO! **Heredia:** Volcán Barva, 670-720 m, 8 XII 1987, *Grayum 8512*, AMO! CR! Vara Blanca de Sarapiqui,1460 m, 1 II 1938, *Skutch 3551*, AMES! K! S! US! **Puntarenas:** Monteverde,1000 m, 23 I 1999, *Blanco 935*, US! **San José:** P. N. Braulio Carrillo, 1150-1175 m, 20 XII 1990, *Ingram 817*, F! SEL! **PANAMA: Chiriquí:** Fortuna dam, 1000-1200 m, 24 IX 1976, *Dressler 5456*, AMO x2! Fortuna, 1200-1600 m, 12 IX 1977, *Folsom 5284*, MO! Pinola, 20 IV 1968, *Kirkbride 870*, MO! Pinola, 21 IV 1968, *Kirkbride 1016*, MO x2! NY! Rio Hornito, 1050-1100 m, 11 XI 1980, *Stevens 18290*, MO! Rio Hornito, 1050-1100 m, 11 XI 1980, *Stevens 18306*, MO! **Veraguas:** Santa Fe, 1200 m, 18 III 1973, *Croat 23200*, AMO x2! Ibid. *23200A*, SEL! Santa Fe, 21 XII 1975, *Dressler 5228*, AMO! Santa Fe, 700-1200 m, 18-19 III 1973, *Liesner 963*, MO!

EPIDENDRUM PHYLLOCHARIS Rchb.f.

OTHER SPECIMENS: COSTA RICA: Without data, *Endres s.n.*, W 43674! **Alajuela:** Monteverde, 950 m, 8 VIII 1989, *Bello 1087*, INB! Piedades de San Ramón, 1026 m, 2 XII 1929, *Brenes 2206*, CR! Monteverde, 820 m, 10 VI 1987, *Haber 7250*, MO! **Cartago:** Cartago to San Isidro, 1800-2800 m, 22 VIII 1963, *Dodson 2481*, SEL! **San José:** San Jerónimo, 17 XI 1984, *Dressler 176*, USJ! Copey, 1850 m, 10 VII 2002, *Sánchez 1287*, MO! **PANAMA: Chiriquí:** Fortuna dam, 1000-1200 m, 14 VIII 1976, *Dressler 4360*, AMO! Fortuna dam, 1400-1600 m, 15 IX 1977, *Folsom 5547*, MO! (Illustration voucher.) **Panamá:** Cerro Jefe, 22 VI 1977, *Folsom 3837*, MO! **Veraguas:** Cerro Tute, 650 m, 12 X 1975, *Dressler 5189*, AMO! **COLOMBIA: Risaralda:** Cerro Moctezuma, 1350 m, 15 III 1986, *Bernal 1000*, COL! **Valle del Cauca:** Queremal, 20 I 1980, *Guarín 76*, COL! El Cairo, 2000 m, XII 1978, *Ortiz Valdivieso s.n.*, HPUJ!
OTHER RECORDS: COLOMBIA: Antioquia: Frontino, Musinga, *Escobar 1267*, slide, AMO!

EPIDENDRUM PLATYSTIGMA Rchb.f.

OTHER SPECIMENS: COSTA RICA: Without locality, *Quiros (246)227*, CR! Ibid. *DeWolf 468*, AMES! Ibid., 9 IX 1932, *Valerio 150*, AMES! CR! F! **Alajuela:** Monteverde, 1000 m, 10 IX 1991, *Bello 4038*, AMO! La Palma de San Ramón, 1075-1100 m, 27 VI 1927, *Brenes (26) 1611*, F! Ibid., 1 I 1929, *Brenes 1684(17)*, CR! F! San Ramón, 01 I 1928, *Brenes 1684 (19)*, NY! La Palma de San Ramón, 1075-1100 m, *Brenes 1689(17)*, CR! Ibid. 1175 m, 4 X 1924, *Brenes 2328(263)*, CR! La Palma de San Ramon, 30 VII 1932, *Brenes 16200d*, NY! Monteverde, 1600-1620 m, 12 VII 1976, *Dryer 431*, CR! La Hondura, 18 V 1982, *Hágsater 6657*, AMO! La Palma de San Jeronimo, 1500 m, 17 IX 1985, *Hágsater 6922*, AMO x3! (Illustration voucher) CR! USJ! Alto de Villegas, 1250 m, *Hágsater 6993*, AMO! Bajos del Toro, 1700 m, 7 VIII 1988, *Jiménez 622*, F! Zapote, 1575 m, 4 VII 1938, *Smith H 830*, AMES! K! Zapote, 1400 m, 17 VIII 1938, *Smith 1101*, AMES x2! F! NY! Palmira, 2200 m, 14 IX 1938, *Smith 1188*, AMES x2! NY! **Cartago:** La Carpintera, 27 IX 1933 *Brenes 227*, AMES! CR! La Fuente, 1200 m, 9 VIII 1924, *Alfaro s.n.*, US! Cañon del Guarco, 3150 m, *Hágsater 6384*, AMO! La Estrella, 1500 m, 12 I 1923, *Lankester 409*, AMES! Tapanti, 1250 m, 7 XI 1971, *Lent 2211*, CR! NY! El Muñeco, ca. 1400 m, 8 II 1924, *Standley 33783*, AMES! F! US! La Estrella, 26 III 1924, *Standley 39501*, AMES! Ibid., *Standley 39530*, AMES! US! El Muñeco, 1400-1500 m, 6 III 1926, *Standley 51364*, AMES! Navarro Valley, 6000 ft, 1 V 1928, *Stork 1726*, AMES! San Cristobal Norte, 1800-1850 m, 21 IX 1979, *Walter 79504*, CR! **San José:** Villa Mills, 2700 m, 28 VIII 1960, *Cruz 138*, FLAS! Cedrillos, 17 IX 1985, *Hágsater 6747*, AMO x5! Rio Hondura, 1440 m, 1 X 1967, *Lent 1356*, AMES! CR! F! E of San José, 20 X 1960, *Palmer s.n.*, NY! San Cristobal, 5500 ft, 14 VI 1928, *Stork 2538*, AMES x2! La Chonta, 1700 m, 28 I 1979, *Todzia 555*, CR! Bajo La Hondura, 1400-1500 m, 17 X 1974, *Utley 1420*, CR! Alto La Palma, 1500 m, 18 IX 1979, *Walter 79464*, CR! **Puntarenas:** Guápiles, 1830 m, 14 X 1950, *Allen 5695*, AMES! Coto Brus, 1400 m, 21 IX 1997, *Navarro 819*, INB! Monteverde, 1400-1700 m, 18 X 1978, *Todzia 486*, CR!

EPIDENDRUM POLYCHLAMYS Schltr.

OTHER SPECIMEN: COSTA RICA: Cartago: La Ventolera, 1900 m, 25 VI 1984, *Gómez 10061*, CR! USJ! Ventolera, 1800 m, 26 V 1965, *Jiménez 3216*, CR! F x2! SEL! La Estrella, VI 1925, *Lankester s.n.*, BM! Cascajal, 5500 ft, VI 1919, *Lankester 92*, K! Casamata, 1956 m, 24 VI 1994, *Lépiz 398*, INB x2! Alto de la Estrella, 26 III 1924, *Standley 39132*, AMES! US! Ibid. 27 III 1924, *Standley 39570*, AMES! Estrella, 7000 ft, 21 IV 1928, *Stork 1514*, MO! Tapantí, 1300 m, 17 XI 1978, *Todzia 545*, CR! SW of Cartago, 5550 ft, 15 VII 1962, *Webster 12356*, AMES! F! El Tejar, 1800 m, 11 V 1956, *Williams 19871*,

CONTINUED: *E. POLYCHLAMYS*

SEL! Cerro de Las Vueltas, 1900 m, 17 V 1956, *Williams 20086*, SEL! **Heredia:** Río Vueltas, 2100 m, 23 V 1969, *Gómez 2255 B*, CR! Ibid. *Gómez 2256 B*, AMES! CR! F! MO! NY! Cerro de Las Lajas, 2000-2400 m, 7 III 1926, *Standley 51614*, AMES! San Cristobal, 5000 ft, 27 V 1928, *Stork 2248*, AMES x2! MO! Monte de la Cruz, 27 IV 1967, *Weston 1067*, USJ! **Limón:** Cerro Matama, 1600 m, 23 IV 1989, *Herrera 2737*, MO! **San José:** La Palma, 2200 m, 11 VIII 196, *Dressler s.n.*, MO! La Chonta, ca. 2500 m, 26 V 1977, *Gómez 2782*, USJ! Cascajal, 1600 m, 22 IV 1983, *Gómez 20266*, MO! P.N. Braulio Carrillo, 1650 m, 22 IX 1990, *Ingram 572*, USJ! La Palma, 1 VI 1921, *Jiménez 1202*, CR! Alto La Palma, 1500 m, 31 III 1974, *Lent 3850*, CR! F! MO! SEL! San Cristobal, 1800 m, 22 VI 1981, *Luer 6381*, SEL! La Hondura, 1500-1700 m, 27 VII 1923, *Maxon 8120*, AMES! US! San Cristobal Norte, 1900 m, 20 VI 1996, *Mora s.n.*, USJ! Cerros de Escazú, 2300 m, 5 VIII 1995, *Morales 4646*, INB! MO! San José, 17 VII 1938, *Orozco 82*, USJ! Ibid. *Orozco 223*, F! USJ x2! San Jerónimo, 5 VIII 1932, *Quiróz 873*, CR! La Palma, 1600 m, 17 III 1924, *Standley 38280*, F! San Isidro de Coronado, 1420-1800 m, 22 III 1924, *Standley 38874*, AMES! US! Ibid. 27 III 1924, *Standley 38890*, AMES! Las Nubes, 1800-2000 m, 7 V 1978, *Todzia 249*, CR! La Palma de San José, 16 VIII 1932, *Valerio 139*, CR! F! La Hondura de San José, 1300 m, 15 VIII 1933, *Valerio 794*, CR! F! Zurquí, 1650 m, 3 VIII 1994, *Vargas 426*, INB! La Palma, 1400 m, 22 VI 1978, *Todzia 322*, CR! **PANAMA: Chiriquí:** Fortuna, 10 II 1988 *Akers sub OIC 9298*, SEL! Alto de Guayabo, 1400-1500 m, 8 I 1977, *Dressler 5574*, AMO! Cerro Colorado, ca. 2000 m, 20 VIII 1998, *Dressler 6227*, AMO x2! (Illustration voucher.) Fortuna dam, 1100 m, 9 II 1985, *H. van der Werff, 6809* MO! Chiriquicito, 20 IV 1968, *Kirkbride 934*, MO! Fortuna, 1100 m, 16 II 1985, *Luer 10582*, MO! **OTHER RECORDS: COSTA RICA: San José:** Coronado, entre Bromelias, 1845 m, 18 IV 2003, *Schug 101*, digital photo, AMO!

EPIDENDRUM RAMONIANUM Schltr.

OTHER SPECIMENS: COSTA RICA: Guanacaste: Santa Elena, ca. 1400 m, 5 VII 1989, *Atwood 89-265*, USJ! **Alajuela:** Vara Blanca, *Hágsater 6700*, MEXU! San Ramon,1 V 1990, *Mora de Retana s.n.*, USJ! Palmira, 2200 m, 14 IX 1938, *Smith 1188*, F! **Heredia:** Barva Station, 2700 m, 10 IX 1990, *Ingram 514*, MO! **Limón:** La Honda, región Guápiles, 1830 m, 14 X 1950, *Allen 5695*, AMES! F! **Puntarenas:** Monteverde, 1550-1600 m, 5 VIII 1988, *Atwood 88-21*, AMO! Coto Brus, 1350 m, 6 XII 2000, *Blanco 1715*, USJ! **San José:** San Jeronimo, 3 X 1984, *Dressler 79*, USJ! N.P. Braulio Carrillo, 1400 m, 18 IX 1984, *Folsom 11033*, CR! La Hondura, 1300-1700 m, 16 III 1924, *Standley 37643*, US! El Empalme, 22 IX 1979, *Todzia 783*, CR! Alto de la Palma, 1400-1500 m, 17 X 1974, *Utley 1420*, F! **Cartago:** Cerro Muerte, 1 V 1993, *Arguedas s.n.*, USJ! Palmital, 1 V 1993, *Arguedas s.n.*, USJ! Palmital, 1 V 1993, *Artavia s.n.*, USJ! Tapantí, 1250 m, 7 XI 1971, *Lent 2211*, F! Cerro de la Muerte, 1850 m, 1 V 1993, *Mack 20*, USJ! Cerro de la Muerte, 1850 m, 1 V 1993, *Mack 23*, USJ! Palmital, 1865 m, 25 V 1993, *Rojas 11*, USJ! Estrella, 26 III 1924, *Standley 39501*, US! Palmital, 1865 m, 25 V 1993, *Ureña 1*, USJ! **DISTRIBUTION AND ECOLOGY:** Known only from Costa Rica, in part of Central Cordillera and Cordillera of Talamanca. Epiphyte in cloud forest and pastures, 1150-2200 m altitude. Flowering from July to November.

EPIDENDRUM RESTREPOANUM A.D.Hawkes

OTHER SPECIMENS: VENEZUELA: Táchira: Río Quinimari, 2500 m, 13 I 1968, *Steyermark 100842*, AMES! **Trujillo:** Trujillo-Boconó, 2400 m, 30 IV 1948, *Renz 4642*, RENZ! Ibid. 2300 m, 26 II 1949, *Renz 5165*, RENZ! **COLOMBIA: Antioquia:** Páramo Frontino, 3450 m, 26 X 1976, *Boeke 256*, MO! SEL! Anocosca-Abriaqui, Morro Pelado, 3190 m, 15 III 1944, *Core 453*, AMES! US! Boquerón, 3050 m, 06 IV 1963, *Espinal 1170*, COL! Salgar, Cerro Plateado, 2700-3300 m, 4 XI 1985, *Franco 2328*, AMES! COL! Páramo Urrao, 3300 m, *Ospina 40*, JAUM! **Caldas:** Salamina, 3500 m, 1 VI 1945, *Bro. Tomas 2417*, US! Termales del Ruiz, 3200 m, 04 IV 1956, *Renz 8553*, RENZ! **[Cesar:]** Sierra Nevada de Santa Martha, *Purdie s.n.*, K! **Cundinamarca:** Subia, 9 VI 1985, *Ospina 1142*, COL! S. Miguel, 2800 m, 26 I 1941, *Renz 3155*, RENZ! Retiro Calera, 3100 m, 13 VII 1941, *Renz 3961*, RENZ! S. Miguel, 2900 m, 30 VI 1941, *Renz 3962*, RENZ! Gutiérrez, 2900 m, 8 VII 1955, *Renz 8445*, RENZ! **Putumayo:** Laguna La Cocha, 2800-3000 m, 1 VI 1946, *Schultes 7833T*, AMES x2! **Quindio:** Salento, 3100 m, 14 III 1993, *Madriñan 737*, AMES! COL!
OTHER RECORDS: VENEZUELA: Without data, *Romero s.n.*, color photo, in Romero, G. A., Venezuela, Orchid Paradise, pg. 77, 1998. **COLOMBIA: Antioquia:** Urrao, 2800 m, *Duque 1444*, photo & notes, AMO! *Escobar s.n.*, color slide, AMO! published as *E. podocarpophilum*, **Orquídeas Nativas de Colombia** 5: 764, Fig. 886, 1994. **Caldas:** Páramo de Letras, Manizales, 3300 m, *Escobar 101*, color slide, AMO! Manizales, *Escobar 969*, color slide, AMO! published as *E. podocarpophilum* in **Orquideología** 10(1): 70, Fig. 124, 1975. Páramo de Manizales, *Ortiz Valdivieso s.n.*, color slide, AMO! HPUJ! **ECUADOR: Carchi:** Tulcán, Tufiño, Hort. Ecuagenera, ca. 3000 m, *Hágsater 14011*, digital photo, AMO!

EPIDENDRUM RUGOSUM Ames

OTHER SPECIMENS: COSTA RICA: Guanacaste: Monteverde, 1300 m, 4 IX 1988, *Haber 8717*, AMO x2! MO! Ibid. *Haber 8718*, MO! Monteverde, 1200 m, 31 VIII 1989, *Haber 9484*, INB! MO! Monteverde, 1500 m, 12 X 1989, *Haber 9545*, AMO x2! **Heredia:** Volcán Barva, 950-1150 m, 11 XI 1986, *Grayum 7791*, AMO x2! Varablanca, 16 XI 1984, *Hágsater 6776*, AMO x2 **Limón:** Río Terbi, 2300-2400 m, 9 IX 1984, *Davidse, 28737*, MO! **Puntarenas:** Monteverde, 1600 m, 5 X 1989, *Bello 1350*, INB! Cerro Betsú, 2600 m, 6 X 1989, *Chacón 496*, AMO! Monteverde, 1550 m, 20 XI 1988, *Haber 8814*, AMO! **Cartago:** S of Cartago, 7 VII 1986, *Atwood 86-15*, SEL! Tapanti, 17 X 1969, *Cordoba 1104*, CR! USJ! Ojo de Agua, 2900-3100 m, 8 XI 1961, *Cuatrecasas 26545*, US! (Illustration AMO!) Cartago, *Lankester s.n.*, AMES! Santa Clara de Cartago, 1 VII 1923, *Lankester 496*, AMES! El Muñeco, ca. 1400 m, 8 II 1924, *Standley 33750*, AMES! Ibid. *Standley 33882*, AMES! US! Ibid. *Standley 33939*, AMES! El Copey, 1900 m, 17 IV 1949, *Williams 16370*, US! El Tejar, 2500 m, 6 II 1963, *Williams 24446*, AMES! CR! F! U! **Cartago/San José:** carr. Panamericana, 18 VIII 1984, *Dressler 9*, USJ! Cedral, 2000 m, Mora de Retana s.n., (flowers in spirit AMO!) **San José:** S of Empalme, 8750 ft , 6 III 1981, *Almeda 4769*, CAS! El Guarco, 1900 m, 26 IX 1996, *García-Cruz 940*, AMO x3! (Illustration voucher, & flowers in spirit AMO!) Casa Mata, 1950 m, *Hágsater 6340*, AMO! (Illustration). El Empalme, 2000 m, 14 VIII 1986, *Hágsater 8417*, AMO! Bajo La Hondura, 1300 m, 18 XII 1990, *Ingram 806*, AMO! La Hondura, 1300-1700 m, 2 III 1924, *Standley 36252*, AMES! US! Ibid. *Standley 36357*, AMES! San Cristobal, 8000 ft, 27 V 1928, *Stork 2176*, AMES! San Cristobal Road, 5500 ft, 14 VI 1928, *Stork 2552*, AMES! Carretera Inter Americana, 2600 m, 3 VI 1979, *Todzia 795*, CR x2!

EPIDENDRUM SCHLECHTERIANUM Ames

OTHER SPECIMENS: PANAMA: "Panama", I 1858, *Wagner 375*, M! San Juan, XI 1923, *Powell 3465*, AMES! Panama, *Wilson s.n.*, UC! **Colón:** Vigía, 66 m, 27 XI 1934, *Dodge 16562*, AMES! G! **Panamá:** Chiva-Chiva, 100 m, 15 I 1947, *Allen 4022*, G! Barro Colorado Island, I 1939, *Brown 92*, F! Ibid. Pearson Peninsula, 28 m, 24 II 1969, *Croat 8161*, MO! Ibid. 26 II 1969, *Croat 8199*, MO! R. Azote Caballo, 66-70 m, 7 XII 1934, *Dodge 16868*, MO! Barro Colorado Island, 30 XI 1981, *Schmalzel 164*, MO! Ibid. 25 X 1931, *Shattuck 222*, F! MO! **San Blas:** Río Cartí Chico, 200 m, 12 IV 1985, *Nevers 5342*, MO! **Veraguas:** above Santa Fé, 12 XII 1971, *Gentry 3038*, MO!
OTHER RECORDS: Without locality, Illustration prepared for Refugium Botanicum 631, W-R 7187 Icon., W-R 10036!

CONTINUED: *E. SCHLECHTERIANUM*

Without locality, *Hágsater s.n.*, spirit, AMO! Hort. *J. & L. Orchids 484-171* sub *Hágsater 7701*, spirit, AMO! **PANAMÁ: Panamá:** Cerro Campana, 700-900 m, cult. Jardín Bot. La Habana, *Hágsater 11167*, (Illustration voucher) AMO!

EPIDENDRUM SCHUMANNIANUM Schltr.

OTHER SPECIMENS: COSTA RICA: Without data, *Endres s.n.*, W 13625! Atlantic forest, ca. 1000 ft, *Lankester s.n.*, K! **Alajuela:** Volcán Arenal, 500 m, 21 IV 1973, *Lent 3387*, F! Laguna de Hule, 9 IX 1968, *Pohl 1179*, USJ! **Heredia:** Río Sucio, 300 m, 13 II 1882, *Lehmann 1791*, G! Sarapiquí, 850 m, 15 IV 1978, *Todzia 230*, CR! **Limón:** Guápiles, 250-300 m, 16 VIII 1982, *Hágsater 6727*, AMO! Ibid. 10 XII 1983, AMO! Ibid. 29 V 1984, AMO! CR! Carrillo, 350 m, *Kupper 373*, M! Ibid. *Kupper 1557*, M! Ibid. 6 VII 1921, *Werckle 61*, AMES! **San José:** Comprada en mercado en San José, pressed 3 IV 1984, *Hágsater 6780*, AMO!, flower card, spirit AMO! (Illustration voucher) **Cartago:** Peralta, 1500 ft, *Lankester s.n.*, BM!
OTHER RECORDS: COSTA RICA: Alajuela: Laguna de Hule, 9 IX 1968, *Pohl 1179*, Illustration by *R. L. Rodriguez 633*, xerox AMO! **Cartago:** Peralta, 1500 ft, *Lankester s.n.*, photo, K! **Limón:** Guápiles, 250-300 m, 10 VIII 1982, *Hágsater 6727*, flower card, spirit, illustration, AMO! **San José:** Comprada, San José, 31 III 1984, *Hágsater 6780*, flower card, spirit, AMO!

EPIDENDRUM SELAGINELLA Schltr.

OTHER SPECIMENS: COSTA RICA: Without data, *Endres s.n.*, W 5530! Ibid. *Endres s.n.*, W 5538! **Alajuela:** La Palma, 1400 m, 1 VIII 1909, *Brade 1169*, AMES! Los Angeles de San Ramón, 1050 m, 1 VII 1921, *Brenes 45*, AMES! La Palma, 27 III 1966, *Rodríguez 398*, USJ! San Jerónimo, 1 V 1921, *Wercklé 16*, AMES! La Palma, 1500 m, *Wercklé 11596*, US! **Cartago:** Río Grande de Orosí, 1600 m, 14 VII 1971, *Burger 7538*, F! US! Tablazo, 28 IV 1946, *Echeverría 357*, F! Río Grande de Orosí, 1250 m, 2 VI 1994, *Morales 2883*, MO! P. N. Tapantí, 1350 m, 10 VIII 1995, *Morales 4702*, MO! La Carpintera, 1500-1850 m, 1 II 1924, *Standley 34471*, US! Alto de La Estrella, 26 III 1924, *Standley 39113*, AMES! La Chonta, 15 V 1928, *Stork 1926B*, AMES! Santa María, 15 V 1928, *Stork 2096*, AMES! La Carpintera, 5000 ft, 2 V 1928, *Stork 2129*, AMES! Ibid. 23 V 1928, *Stork 2139*, MO! Ibid. 6000 ft, 26 V 1928, *Stork 2157*, AMES! MO! Tablazo, 1500 m, 28 V 1978, *Todzia 290*, CR! Tapantí, 1400-1600 m, 14 IV 1975, *Utley 2134*, F! San Cristobal Norte, 1850 m, 21 IX 1979, *Walter 79499*, CR! El Copey, 1900 m, 17 IV 1949, *Williams 16376*, AMES! La Cangreja, 1800 m, 11 V 1956, *Williams 19834a*, MEXU! Ibid. El Tejar, 1900 m, 20 V 1956, *Williams 20153*, F! US! **Guanacaste:** Santa Elena, 1400 m, 5 VII 1989, *Atwood 89-268*, MO! **Heredia:** Yerba Buena, ca. 2000 m, 22 II 1926, *Standley 49127*, AMES! US! Ibid. *Standley 49754*, AMES! Ibid. *Standley 50131*, AMES! US! Ibid. *Standley 50137*, AMES! US! Ibid. *Standley 50171*, AMES! US! Cerros de Zurquí, 2000-2400 m, 3 III 1926, *Standley 50568*, AMES! Ibid. *Standley 50655*, AMES! Cerro de Las Caricias, *Standley 52477*, AMES! Ibid. 11 III 1926, *Standley 52489*, AMES! **Puntarenas:** [Monteverde], 1700-1750 m, 24 VI 1989, *Atwood 89-234*, USJ! Cerro Chomogo, 1700 m, 15 IV 1989, *Boyle 69-89*, USJ! **San José:** Alto de La Palma, 15 VI 1983, *Barringer 3183*, F! Ibid. 1400-1500 m, 19 VII 1983, *Barringer 3968*, F! P. N. Braulio Carrillo, 1680 m, 2 V 1987, *Escobar 3917*, USJ! San Cristóbal Sur, 1850 m, 26 IX 1996, *García-Cruz 946*, AMO x2! La Palma, 1400-1500 m, 20 IX 1960, *Horich s.n*, AMES 88692! Ibid. 1400 m, 31 III 1974, *Lent 3854*, F x2! Ibid. 1450-1550 m, 6 V 1906, *Maxon 467*, AMES! US! [Alto de] La Palma, 1500-1700 m, 17 VII 1923, *Maxon 7867*, AMES! Ibid. *Maxon 7903*, AMES! US! Casamata, 1900 m, 31 III 1995, *Morales 3802*, MO! La Palma, 8 VII 1918, *Rowlee 225*, AMES! Ibid. 1600 m, 3 II 1924, *Standley 32962*, US! Ibid. *Standley 32982*, AMES! Ibid. 17 III 1924, *Standley 38000*, AMES! F! US! Ibid. ca. 1600 m, *Standley 38047*, AMES! MICH! US! Ibid. *Standley 38245*, AMES! US! Ibid. *Standley 38288*, AMES! US! Ibid. ca. 1000 m, 17 III 1924, *Standley 38303*, US! Ibid. *Standley 38333*, AMES! US! Zurquí, 2000-2500 m, 13 II 1926, *Standley 48303*, AMES! US! La Hondura, 1200-1500 m, 9 III 1926, *Standley 51793*, AMES! US! San Cristobal, 1350 m, 27 V 1928, *Stork 2183*, AMES! MO! La Palma de San José, 1400-1500 m, 12 VIII 1979, *Todzia 676*, CR! Cerro de La Muerte, 1750 m, 25 V 1997, *Weinbeer s.n.*, USJ! San Cristobal, 3200 m, 21 V 1997, *Zuñiga s.n.*, USJ 63867! **PANAMA: Bocas del Toro:** Cerro Colorado, 1400-1450 m, 7 VII 1988, *McPherson 12715*, MO! **Chiriquí:** Cerro Colorado, 1610-1670 m, 14 VII 1976, *Croat 37104*, MO! Cerro Hornito, 6000 ft, 8 V 1978, *Hammel 3066*, MO! Los Planes de Hornito, 1100-1200 m, 17 VI 1982, *Knapp 5503*, MO! Fortuna Dam, ca. 1150 m, 23 VI 1986, *McPherson 9614*, MO! Cerro Colorado, 5000-5500 ft, 4 V 1975, *Mori 5866*, MO! **Coclé:** Alto Calvario, 850 m, 13 IX 1987, *Croat 67560*, MO! El Copé, 800-900 m, 2 X 1977, *Dressler 5730*, AMO! (Illustration voucher) El Copé, 700-850 m, 3 X 1977, *Folsom 5751*, MO! Ibid. 650-850 m, 5 XI 1977, *Folsom 6203*, MO! El Potroso, 1200-1300 m, 24 X 1980, *Systma 1836*, MO!
OTHER RECORDS: COSTA RICA: Without locality data, 1 IV 1966, *R. L. Rodriguez s.n*, xerox of illustration, AMO! **PANAMA: Chiriquí:** Cerro Horqueta, 1700-2300 m, 20 V 1983, *Hágsater 6537*, spirit, flower card and illustration, AMO!

EPIDENDRUM SERRULATUM Sw.

OTHER SPECIMENS: CUBA: Guantánamo: Pico Turquino, 2 VI 1936, *Acuña 10007*, HAC x3! Mayarí Arriba, Sierra Cristal 1000-1235 m, 22 II 1976, *Bisse 30488*, HAJB! **Santiago de Cuba:** Cueva del Aura, 31 VII 1935, *Roig 9536*, HAC! HAJB x3! Pico Cuba, 1600 m, IV 1979, *Bisse 19065*, HAJB! **DOMINICAN REPUBLIC:** Valle Nuevo, IV 1967, *Dod 331*, Herb. Dod! Pinar Bonito, 1600 m, 16 X 1981, *Dod 793*, Herb. Dod! Loma de Cabrera, 1600 m, III 1981, *Dod 840*, Herb. Dod! Loma Nalga de Maco, 1900 m, IV 1979, *Dod 852*, Herb. Dod! Loma Nalga de Maco, 1980 m, IV 1983, *Dod 1065*, Herb. Dod x2! (Illustration, AMO!) La Pirámide, 2600 m, IX 1983, *Dod 1471*, Herb. Dod! Nalga de Maco, 1750 m, 9 VI 1915, *Ekman 6298*, S! Pico del Valle Nuevo, 2650 m, 15 X 1929, *Ekman 13769*, S! La Nevera, 2100 m, 18 X 1968, *Liogier 13148*, AMES! US! Valle Nuevo, 2300 m, 1 VI 1968, *Dod sub Liogier 13514*, NY! Cienega de la Culata, 1650 m, 24 X 1969, *Liogier 16082*, AMES, NY! Valle Nuevo, 2300 m, 3 IV 1971, *Liogier 17972*, F! NY! La Piramide, 25 I 1976, *Liogier 24762*, AMO x2! SE of Constanza, 2225 m, 25 XI 1992, *Thompson 11299*, CM! UPRRP! (Illustration voucher.) La Nevera, 2200 m, 8 X 1991, *Thompson 9538A*, CM! La Piramide, 2400 m, 10 VI 1982, *Zanoni 20812*, AMES! La Piramide, 7600 ft, 3 IV 1981, *Zanoni 12188*, AMES! **JAMAICA:** without locality, *Hitchcock s.n.*, MO! Sir John's Peak, 7 X 1908, *Britton 3878*, BM! Chinchona, 5000 ft, 20 IV 1900, *Harris 7860*, BM! Sir John's Peak, 6000 ft, 11 III 1907, *Harris 10452*, BM! Blue Mountain Peak, 20 IV 1903, *Jenman 110*, K! Portland Gap, 1650 m, 26 III 1920, *Maxon 1093*, AMES! F! ILL! Blue Mountain Peak, 2235 m, 25 III 1920, *Maxon 1118*, US! Blue Mountain Peak, 2235 m, 25 III 1920, *Maxon 1119*, AMES! NY! US! Blue Mountain Peak, 1950 m, 16 III 1920, *Maxon 1171*, AMES! BM! NY! US! Blue Mountain Peak, 2235 m, 20 IV 1903, *Maxon 1431A*, AMES! US! Blue Mountain Peak, 2100 m, 7 VII 1926, *Maxon 9867*, NY! Blue Mountains Peak, 2100 m, 8 VII 1926, *Maxon 9567*, AMES! Blue Mountains Peak, 2000 m, 8 VII 1926, *Maxon 9967*, AMES! Sine loc. *McFayden s.n.*, K! Blue Mountain Peak, 6-7000 ft, *Morris 20*, K x2! Blue Mountain Peak, 6332 ft, 2 II 1961, *Renz 9892*, RENZ! Ibid. 2257 m, 13 II 1961, *Renz 9913*, RENZ! Monkey Hill, 1920 m, IV 1906, *Shrieve s.n.*, AMES!
OTHER RECORDS: CUBA: Santiago de Cuba: Pico Turquino, 3750 ft, 31 VII 1935, *Roig 6614*, Illustration, AMES!

EPIDENDRUM SORATAE Rchb.f.

OTHER SPECIMENS: PERU: Without locality data, *Collantes s.n.*, USM! **Cusco:** P.N. Manu, 3350-3400 m, 1 V 1990, *Cano 3311*, USM! Ibid. 3250-3350 m, 1 IX 1990, *Cano 4046*, USM! Tres Cruces, 3330-3500 m, 29 VI 1978, *Gentry 23454*, F! MO! SEL! Wenner Gren ruins, 3400-3600 m, 5 VIII 1942, *Metcalf 30766*, AMES x2! MO! UC! US! Tres Cruces, 3600 m,

CONTINUED: *E. SORATAE*

Nargod 2259, AMES! Machu Picchu, 2300-4150 m, 16 III 1988, *Núñez 8857*, CUZ! MO! SEL! Urubamba, 3200 m, 6 VIII 1942, *Vargas 2928*, AMES! CUZ! Choquechurco, 3500 m, 8 III 1967, *Vargas 19008*, CUZ! (photo at AMO!) **Huancavelica:** Inquilpata, 2900 m, 15 VI 1999, *Suárez 3036*, USM! **La Libertad:** Puerta del Monte, Paso La Sabana, 3250 m, 23 V 1961, *López 3471*, AMES! **Pasco:** Oxapampa, San Alberto, 2700-2730 m, 13 IX 1995, *La Torre 1207*, USM! Ibid. Santa Barbara, 3100-3200, 16 IX 1996, *La Torre 1555*, USM! Ibid. *La Torre 1563*, USM! Ibid. *La Torre 1631*, USM! **Puno:** Ollachea, 2550 m, 30 XII 1947, *Vargas 6934*, AMES! CUZ! Ollachea-Ackopampa, 3450 m, 31 XII 1947, *Vargas 6979*, AMES! CUZ! **BOLIVIA: Cochabamba:** Laguna Corani, 3115 m, 24 VIII 1994, *Ritter 1246*, MO! Colomi, 3000 m, 23 X 1985, *Solomon 14488*, MO! Totolima, 3100 m, 7 VIII 2001, *Vargas 6493*, MO! **La Paz:** Tacacoma, 3550 m, 24 I 1981, *Luer 5728*, SEL!

EPIDENDRUM STENOSELAGINELLA Hágsater & E.Santiago

OTHER SPECIMENS: NICARAGUA: Granada: Volcán Mombacho, ca. 1000 m, 9 VI 1981, *Moreno 9124*, MO! Ibid. 700-800 m, 26 II 1982, *Moreno 15565*, MO! **Matagalpa:** Santa María de Ostumas, 930 m, *Heller 10392*, SEL! **COSTA RICA:** Without data, *Endres s.n.*, W 142102! Ibid. *Endres 83*, W 10524! Quebrada verde, *Endres s.n.*, W 13647! W 31360! W 37181! W 43651! Ibid. *Endres 83-191*, W 36506! **Alajuela:** La Paz de San Ramón, 1100 m, 20 VI 1925, *Brenes 1311*, AMES! CR! NY! Alto de La Palma, 1130-1230 m, 13 VII 1983, *Escobar 2797*, CR! Los Angeles Norte, 1100 m, 6 VI 1995, *Morales 4422*, MO! La Peña de Zarcero, 1400 m, 11 V 1938, *Smith 542*, AMES! San Luis de Zarcero, 1550 m, 18 V 1938, *Smith 610*, AMES! El Silencio, 1500 m, 11 VI 1938, *Smith 754*, AMES! San Luis de Zarcero, 1550 m, 14 VI 1938, *Smith 773*, AMES! F! K! El Silencio de Zarcero, 1400 m, 19 VIII 1938, *Smith 1134*, AMES! La Palma,1500 m, 1 VIII 1910, *Wercklé 838*, CR! **Cartago:** Tapantí, 1440 m, 21 VII 1994, *Lépiz 502*, INB! El Muñeco, ca. 1400 m, 3 II 1924, *Standley 33742*, AMES! La Estrella, 26 III 1924, *Standley 39420*, AMES! Tapantí, 20 VI 1987, *Vargas 7*, USJ! **San José:** La Hondura, 1300-1700 m, 2 III 1924, *Standley 36306*, AMES! Ibid. *Standley 36387*, AMES! Ibid. *Standley 36410*, US! Ibid. *Standley 36454*, US! F! Ibid. 16 III 1924, *Standley 37589*, AMES! F! US! Ibid. *Standley 37902*, MICH! US! Ibid. *Standley 37914*, AMES! US! **PANAMA: Chiriquí:** Los Planes de Hornito, 1100-1200 m, 10 V 1982, *Knapp 5035*, MO!
OTHER RECORDS: NICARAGUA: Granada: Plan de las Flores, 14 V 1975, *Atwood A205*, MSC (cited in Ann. Missouri Bot. Gard. 71: 205. 1984). Volcán Mombacho, 4100 ft, *Heller 1125*, Illustration & description, Heller notes, SEL!, xerox AMO! [This illustration, redrawn by F. Hamer, has been published as *Heller 10392* in Icones Pl. Trop. 8: 737. 1982]. **Jinotega:** Peña Blanca, 3900 ft, and Finca Sta. Fe, 2300 ft, *Heller* Notes, SEL, xerox AMO!

EPIDENDRUM STICTOGLOSSUM Hágsater & D.Trujillo

OTHER SPECIMENS: PERU: Ancash: Prov. Yungay: Laguna Llanganuco, 3850 m, 28 IX 1982, *de Bast 20*, USM! Llanganuco Valley, 14000 ft, 20 VII 1968, *Battgate 32A*, E! P. N. Huascarán, Huaráz, 13/14 X 1976, *Bernardi 16493*, G! Laguna Llanganuco, 3750 m, 9 VIII 1986, *Mostacero 1421*, HUT! María Josefa-Llanganuco, 3800 m, 18 VII 1992, *Mostacero 2733*, HUT! Huascarán, north face, 4200 m, 30 IX 1975, *Saunders 1333*, AMES! K! P.N. Huascarán, Llanganuco, María Josefa Trail, 9°05'S 77°41'W, 3580-3850 m, 20/30 XII 1984, *Smith 8869*, CPUN! HUT! MO! **La Libertad: Prov. Pataz**: Chigualen, 3550 m, 28 I 1996, *Villalobos 23*, MOL!
OTHER RECORDS: PERU: Ancash: Prov. Carhuaz: Pampa de ULTA, carretera a Chacas, 3600-3650 m, 15 IV 2006, *La Torre 3001*, Illustration by Delsy Trujillo 14 VI 2006, digital image AMO! **La Libertad: Prov. Santiago de Chuco:** 4200 m, *Trujillo 180*, digital photos and illustration, AMO! **Prov. Sánchez Carrión**: Distr. Huamachuco, Markawamachuco, 3380 m, *Trujillo 202*, URP! Digital photos of sterile plant, AMO!

EPIDENDRUM STOLIDIUM Hágsater

OTHER SPECIMENS: PANAMA: Chiriquí: Guadalupe, 6000-7000 ft, 22 X 1977, *Folsom 6038*, AMO! (Illustration voucher) Cerro Pando, 2400-2500 m, 15 X 1981, *Knapp1605*, MO! Guadalupe, ca. 2500 m, 13 IX 1976, *Luer 1210*, SEL!

EPIDENDRUM TALAMANCANUM (Atwood) Mora Retana & J.García

OTHER SPECIMENS: COSTA RICA: Alajuela: San Carlos, 850 m, 29 VIII 1960, *Cruz 140*, SEL! Balsa, 1100 m, 18 VII 1995, *Hammel 19875*, MO! **Cartago:** El Empalme, ca. 2400 m, 22 II 1978, *Almeda 3820*, CAS! Cerro de la Muerte, 1850 m, 1 V 1993, *Mack 15*, USJ! Tapantí, 1350 m, 14 X 1984, *Mora de Retana 30*, USJ! Tapantí, 1500 m, 28 X 1995, *Morales 4946*, MO! **Heredia:** Porrosatí, 2200 m, 22 VI 1968, *Burger 6087*, F! Cerro Chompipe, ca. 2100 m, 10 VII 1970, *Lellinger 1058*, F! Cerro Chompipe, 2070-2100 m, 4 IX 1979, *Stevens 14031*, MO! San José de la Montaña, 2000 m, 21 V 1978, *Todzia 281*, F! **Limón:** Río Terbi, 2300-2400 m, 9 IX 1984, *Davidse 28776*, MO! Cerros Tararia (Tres Picos), 2400-2600 m, 10 IX 1984, *Davidse 28792*, AMO! P. N. La Amistad, Valle del Silencio, 2400 m, 24 IV 1997, *Gamboa 1236*, MO! **San José:** Madre Selva, 2550 m, 1 V 1993, *Cruz s.n.*, USJ 49491! Ibid. *Cruz s.n.*, USJ 49557! Ibid. 18 V 1993, *Dombeck s.n.* USJ! Km 57, Pan-Am. Hwy., 2400 m, 2 VIII 1967, *Lent 1166*, F! Madre Selva, 2500 m, 25 V 1993, *Rojas 7*, USJ! Ibid. 2750 m, 1 VII 1988, *Sánchez 24*, USJ! Carr. Interamericana, 1850 m, 1 V 1990, *Schmidt s.n.*, USJ 37191! Interamerican Hwy, 2600-2650 m, 30 VII 1979, *Stevens 13391*, CR! ENCB! F! MEXU! MO! El Copey, 7000 ft, 19 IV 1928, *Stork 1606*, MO! Madre Selva, 2500 m, 25 V 1993, *Ureña 3*, USJ! Villa Mills, 2500 m, 11 V 1956, *Williams 19883*, SEL! Cerro de la Muerte, 2600 m, 1 II 1963, *Williams 24170*, F! **PANAMA: Chiriquí:** Cerro Pate Macho, 1800-1950 m, 17 I 1989, *McPherson 13593*, AMO! Cerro Hornitos, 2238 m, 27 VII 1975, *Mori 7517*, MO! SEL!
OTHER RECORDS: COSTA RICA: Cartago: Pan-Am. hwy, La Paz, 1550 m, photographed 26 IX 2002, *Pupulin 4164*, color photo, (published in Hágsater, 2005).

EPIDENDRUM TENUISULCATUM (Dressler) Hágsater

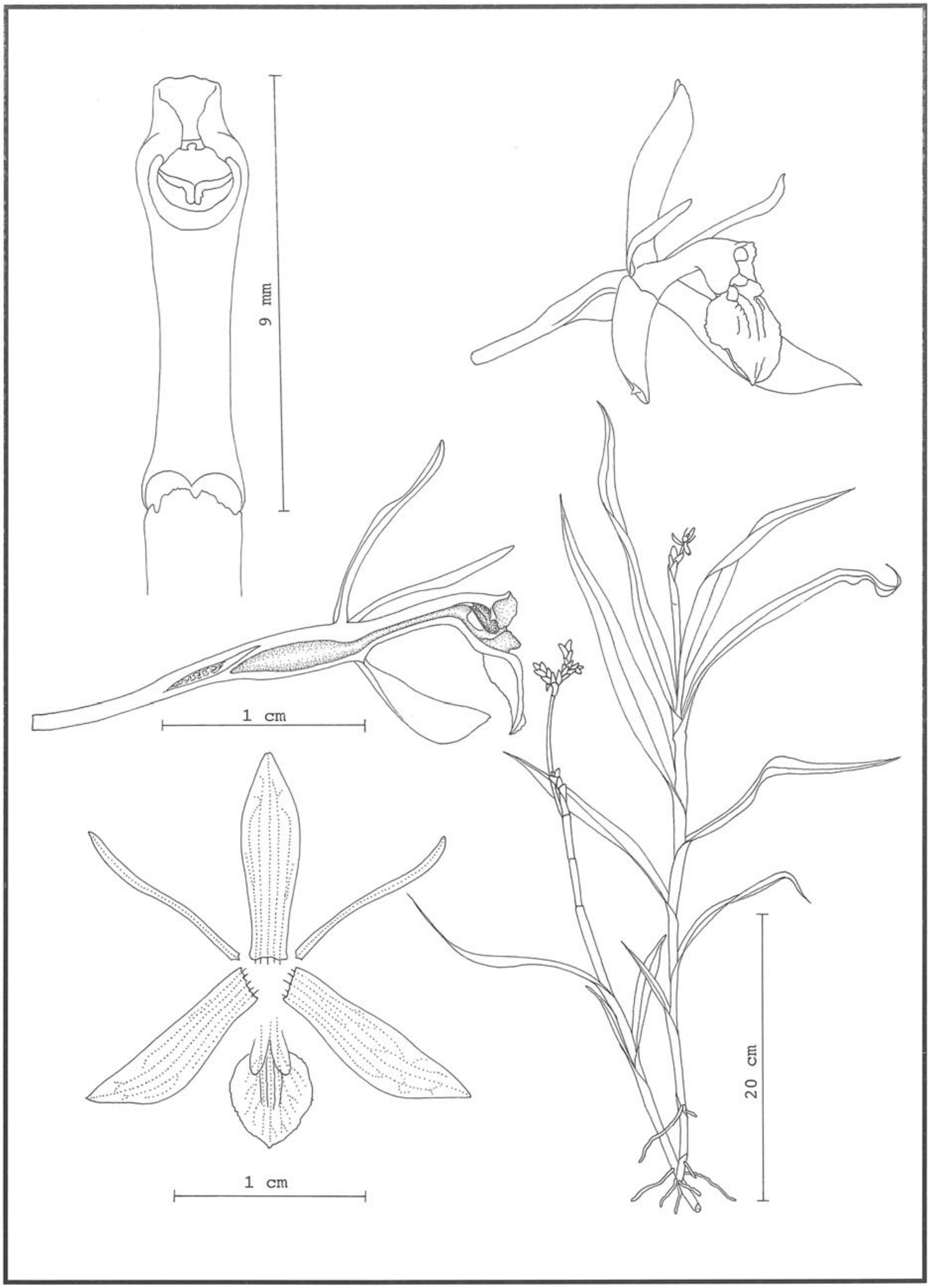
OTHER SPECIMENS: PANAMA: Coclé: above El Copé, 720-800 m, 31 VIII 1988, *McPherson 12874*, MO! (Illustration voucher). Near Aserradero El Copé, about 9 km north of El Copé, 21 X 1979, *Dressler 5850*, PMA.

EPIDENDRUM WERCKLEI Schltr.

OTHER SPECIMENS: COSTA RICA: Without locality, *Endres s.n.*, W 43576! Ibid. *Endres s.n.*, W 43636! Ibid. *Endres 20*, W 13838! **Alajuela:** mercado, *Alfaro 5973A*, US! San Jerónimo, 13 X 1984, *Dressler 84*, USJ! Volcán Barba, 14 VIII 1964, *Tessene 1609*, WIS! **Cartago:** Tapantí, 1700-1840 m, 9 X 86, *Grayum 7715*, MO! Vista de Mar (pentes de Irazú), 1700 m, 1 IX 1896, *Pittier 2460*, BR! US! **Heredia:** Heredia, 20 IX 1932, *Brenes s.n.*, CAS! **Limón:** Guapiles, 1830 m, 14 X 1950, *Allen 5693*, CR! F! US! WIS! **San José:** La Hondura de San José, 11 IX 1932, *Brenes s.n.*, NY! Las Nubes, San Pedro de Coronado, 20 IX 1932, *Brenes 153*, CR! F! Zurquí, 1800 m, 28 X 1969, *Gómez 2422*, CR! F! MO! Cascajal, 1500-1550 m, 7 X 1982, *Hágsater 6927*, AMO x3! (Illustration voucher).CR! USJ! Ibid. 27 XI 1984, AMO! Alto La Palma, 1600 m, 20 IX 1990, *Ingram 542*, USJ! La Palma, Coronado, 1 II 1913, *Jiménez 44*, CR! Alto La Palma, 1560 m, 1 X 1967, *Lent 1334*, F! U! La Hondura,

CONTINUED: *E. WERCKLEI*

1660 m, 22 X 1972, *Lent 3031*, F! U! La Palma de San José, 26 VIII 1940, *León 56*, CR! Cascajal, 1600 m, 30 X 1949, *León 1892*, US! La Palma, 1600 m, 3 II 1924, *Standley 32956*, F! US! Ibid. 17 III 1924, *Standley 38281*, US! Ibid., *Standley 38308*, US! Zurquí, 1 IX 1935, *Valerio 1183*, CR! F! **Puntarenas:** Monteverde, 1600 m, 11 I 1990, *Bello 1743*, MO! Ibid. 1300 m, 2 V 1986, *Haber 4559*, MO! Ibid. 1500-1620 m, 2 I 1985, *Pounds 435*, MO!
OTHER RECORDS: COSTA RICA: Without locality, 14 IX 1963, *R. L. Rodríguez 162*, xerox of illustration, AMO!



EPIDENDRUM ADNATUM Ames & C.Schweinf. **Plate 901**

EPIDENDRUM ADNATUM Ames & C.Schweinf., Schedul. Orch. 8: 41, 1925.

Type: COSTA RICA: [Cartago:] Pejivalle, 30 May 1924, ***Charles H. Lankester 838***. Holotype: AMES!

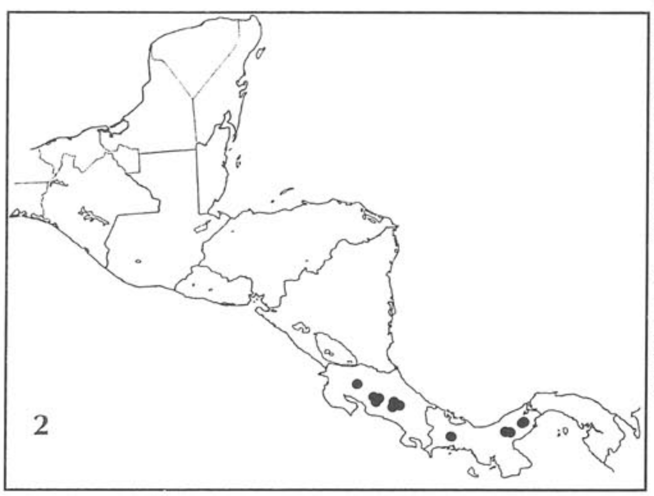
Hierba epífita, simpodial, cespitosa, 13-50 cm de alto. **Raíces** basales, escasas, carnosas, delgadas, 0.4-1.4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados arriba, algo ancipitosos, erectos, rectos, 6.5-32 x 0.13-0.4 cm. **Hojas** 4-7, distribuidas a lo largo del tallo, articuladas, alternas, suberectas, desiguales en tamaño; vaina tubular, estriada, 10-50 mm de largo; lámina linear lanceolada a linear elíptica, cuneada en la base, ápice largamente acuminado, [4.5] 9-22.5 x 0.6-1.8 cm. **Bráctea espatácea** 1, en el ápice del pedúnculo, triangular lanceolada, subaguda, tubular en la base y conduplicada arriba, 1.2-2.3 cm. **Inflorescencias** apicales y raramente laterales, racemosas (produciendo varios rácimos cortos a partir del mismo pedúnculo y entonces pluriracemosas); la apical con un pedúnculo elongado, 8-17 cm de largo; las laterales producidas cerca del ápice del tallo, sésiles, 1.5-3.5 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, bialado, las alas prominentes en la base pero desaparecen hacia el ápice, 7-13 cm de largo; raquis oculto en su totalidad por las brácteas florales, 1.5-4 [7-8] cm de largo. **Brácteas florales** más cortas que el ovario, elípticas, obtusas, conduplicadas, imbricadas, escariosas cuando secas, 7-11 mm de largo. **Ovario** terete, delgado, dilatado justo detrás del perianto, liso, 9-12 mm de largo. **Flores** 6-20, sucesivas, una abierta a la vez por racimo, resupinadas, sépalos hialinos manchados de púrpura, pétalos verde pálido, labelo blanco verdoso, callos blancos, columna verde pálido, antera teñida de púrpura; sin datos de fragancia. **Sépalos** parcialmente extendidos, libres, oblanceolados, subagudos, mucronados, 5-nervados, margen entero, extendido, 9-12 x 2-3 mm; los **laterales** algo cóncavos, falcados. **Pétalos** inflexos, libres, linear-filiformes, subagudos, 1-nervados, margen entero, extendido, 8.7-9 x 0.2 mm. **Labelo** unido a la columna, entero, ovado, subagudo, apiculado, margen ligeramente eroso, 4-5.4 x 3.5-4.2 mm; bicalloso, los callos carnosos, delgados, lateralmente aplanados; disco provisto con 3 quillas lisas, que se desvanecen en la parte media de la lámina. **Columna** delgada, ligeramente arqueada, dilatada en el ápice, 7-9 mm de largo. **Clinandrio** sobrepasando ligeramente el cuerpo de la columna, margen crenulado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente aplanados. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, cubriendo más de la mitad de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, ligeramente inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, scarce, fleshy, thin. **Stems** simple, cane-like, terete at the base, laterally compressed above, somewhat ancipitose, erect, straight. **Leaves** 4-7, distributed throughout the stem, articulate, alternate, suberect, unequal in size; sheath tubular, striated; blade linear-lanceolate to linear-elliptic, base cuneate, apex long-acuminate. **Spathaceous bract** 1, at the apex of the peduncle, triangular-lanceolate, subacute, tubular at the base, conduplicate above, about twice as long as the floral bracts. **Inflorescence** apical and rarely lateral, racemose, producing various racemes from the same peduncle with time and then pluriracemose; the apical inflorescence with an elongate peduncle; the lateral inflorescences sessile, produced from near the apex of the stem; peduncle laterally compressed, ancipitose, two-winged, the wings prominent, wide near the base, progressively narrower until they are obsolete towards the apex; rachis totally hidden by the floral bracts. **Floral bracts** shorter than the ovary, elliptic, obtuse, conduplicate, imbricating, scarious when dry. **Ovary** terete, thin, dilated just behind the perianth, smooth. **Flowers** 6-20, successive, one open at a time per raceme, resupinate, sepals hyaline, tinged with purple, petals pale green, lip greenish white, calli white, column pale green, anther tinged purple. **Sepals** partly spreading, free, oblanceolate, subacute, mucronate, 5-veined, margin entire, spreading; the lateral sepals concave, falcate. **Petals** inflexed, free, linear-filiform, subacute, 1-veined, margin entire, spreading. **Lip** united to the column, entire, ovate, subacute, apiculate, margin slightly erose; bicallose, the calli fleshy, thin, laterally compressed; disc provided with 3 smooth keels that disappear towards the middle of the blade. **Column** thin, slightly arching, dilated towards the apex. **Clinandrium-hood** slightly surpassing the body of the column, margin crenulate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** subapical, slit. **Nectary** penetrating 1/3 of the ovary, slightly inflated, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from the Cordillera Central and west into the Cordillera de Guanacaste in Costa Rica to the Central Panama; epiphytic, from 550-1700 m altitude. Flowering throughout the year.

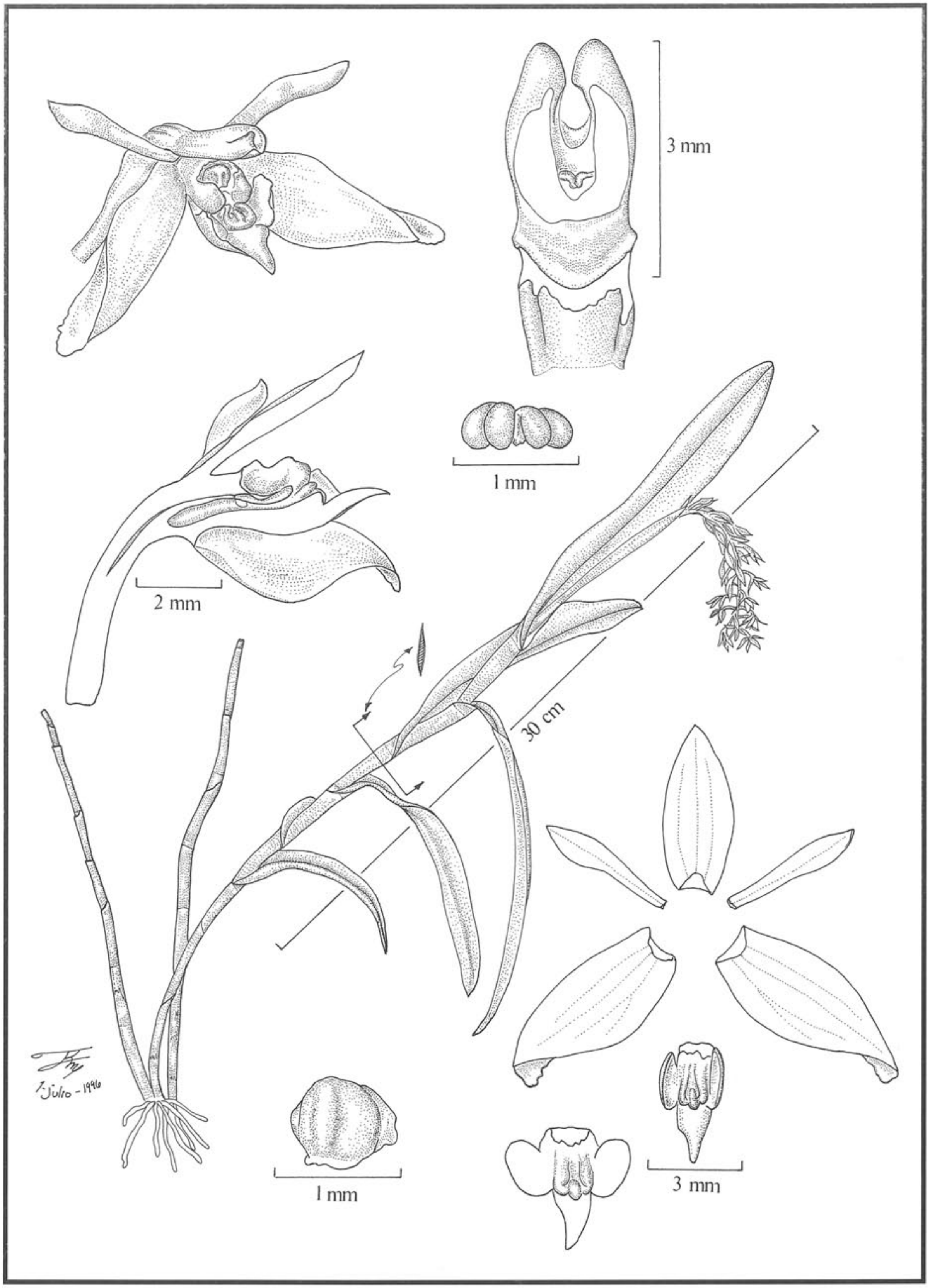
RECOGNITION: *Epidendrum adnatum* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the apical inflorescence (rarely lateral), peduncle elongate, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricating bracts. The species is recognized by the delicate plants with thin stems and narrow, linear-lanceolate to linear-elliptic, acuminate leaves 4.5-22.5 x 0.6-1.8 cm, oblanceolate subacute sepals 9-12 mm long, linear-filiform petals, and the lip ovate and subacute with the base truncate, 4-5.4 x 3.5-4.2 mm. *Epidendrum lankesteri* Ames has larger plants with wider leaves, narrow elliptic to lanceolate leaves 5.5-27 x 1.5-3 cm, 13-16 mm long sepals, and the lip subcordiform, obscurely 4-lobed at the basal half, subacute, with the base deeply cordate, 6-9 x 4-7.5 mm. *Epidendrum panamense* Schltr. is vegetatively similar, but the plants are shorter (to 21 cm tall), the leaves somewhat shorter (5-14.5 cm long), and the lip widely ovate-cordiform, with the base cordate and the apex rounded, 3.5-5 x 3.5-5.7 mm. *Epidendrum jefeallenii* Hágsater & García-Cruz has plants of about the same size and shape, but the sepals are narrowly obovate, obtuse, 8.5-10 mm long, and the lip cordiform, 4-5 x 5-6 mm, with the base cordate and with a pair of rounded, short sinii near the apex.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *ad*, near to, at, and *natus*, born, in reference to the lip which is united to the column and therefore appears as born at the apex of the column, a characteristic of most species of the genus *Epidendrum*.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM AENIGMATICUM Hágsater & Dodson **Plate 902**

EPIDENDRUM AENIGMATICUM Hágsater et Dodson, *sp. nov.*

Type: ECUADOR: El Oro: Cushcapa, SW de Santa Isabel, 2000 m, 25 November 2004, ***Alex Hirtz, Eduardo Sánchez, Willy & Jackie Coeck 9067.*** Holotype: QCA! Isotypes: AMO! USM!

Epidendro tenquendamae F.C.Lehm. & Kraenzl. simile sed foliis latioribus, segmentis floralibus proportione latioribus, callis et carina centrali longioribus, lobuli medii basem attingentibus, recedit.

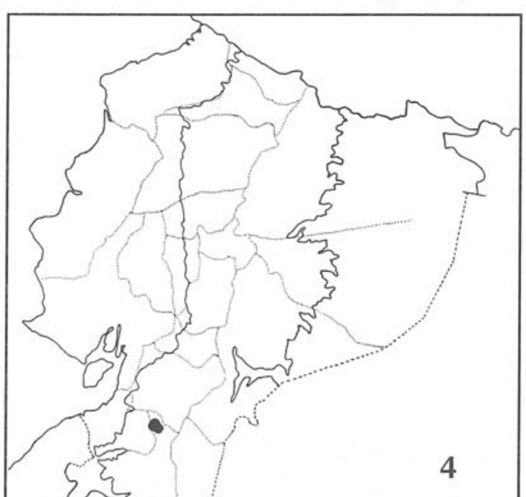
Hierba cespitosa, simpodial, de 40-65 cm de alto. **Raíces** basales, carnosas, gruesas, 3.0-5.8 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y ancipitosos hacia el ápice, delgados, ligeramente sinuosos, verde claro, 22-32 x 0.4-0.95 cm. **Hojas** 6, distribuidas en la mitad superior del tallo, alternas, articuladas, subcoriáceas; vainas tubulares, estriadas, escariosas cuando secas, las 2-3 inferiores no foliosas; lámina, oblongo elíptica, obtusa, con una quilla dorsal prominente, margen entero, 9.5-15 x 1.5-2.1 cm. **Brácteas espatáceas** 1 o 2, tubulares en la mitad basal, conduplicadas en la mitad apical, agudas a acuminadas, ancipitosas, escariosas con el tiempo, 6.5-9.5 x 0.6-0.9 cm. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, multiflora, densa, los botones florales abriendo del ápice hacia la base de la inflorescencia, 21 cm de largo; pedúnculo, recto, delgado, lateralmente aplanado, oculto casi en su totalidad por las brácteas espatáceas, 5.0-9.5 cm de largo. **Brácteas florales** linear triangulares, acuminadas, abrazadoras, casi del doble del largo del ovario, gradualmente más cortas, 4-11 mm de largo. **Flores** 26-60, abriendo de manera sucesiva del ápice hacia la base de la inflorescencia, y llegando a estar abiertas en su totalidad de manera simultánea, el labelo siempre orientado hacia la raquis, sépalos y pétalos verdosos en la superficie dorsal, pardo anaranjados en la superficie ventral, labelo pardo anaranjado, columna blanca; fragancia diurna, dulce, tenue. **Ovario** terete, delgado, no inflado, no ornamentado, 5.0-7.3 mm de largo. **Sépalos** entreabiertos, libres, ovado elípticos, agudos, margen entero, carnosos, 3-nervados, 5.4-6.0 x 2.2-3.0 mm; los **laterales** ligeramente oblicuos, con una quilla dorsal prominente en el ápice, 6.8-7.5 x 2.8-3.0 mm. **Pétalos** extendidos, libres, linear oblanceolados, agudos, carnosos, margen entero, 1-nervados, 3.6-4.0 x 0.5-0.7 mm. **Labelo** unido a la columna, trilobado, carnoso, base cordada, margen entero, 3.6 x 3.5 mm; bicalloso, los callos delgados, carnosos, alargados hasta la base del lóbulo medio; con una quilla intercallosa, gruesa y corta; lóbulos laterales transversalmente ovado elípticos, erectos en posición natural, 1.5 x 1.9 mm; lóbulo medio triangular, agudo, corto y ancho, 1.7 x 1.2 mm. **Columna** recta, corta, gruesa, con un par de lobos laterales redondeados, 3.0 mm de largo. **Clinandrio** reducido, margen entero. **Antera** subreniforme, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales, caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños, menos de 1/4 del largo de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando el ovario, liso. **Cápsula** no vista.

Caespitose, sympodial **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete below, ancipitose above, thin, slightly flexuous, light green. **Leaves** 6, distributed throughout the apical half of the stem, alternate, articulate, subcoriaceous; sheaths tubular, striated, scarious when dry, the lower 2-3 non-foliaceous: blade oblong-elliptic, obtuse, with a prominent dorsal keel, margin entire. **Spathaceous bracts** 1 or 2, the basal half tubular, conduplicate above, acute to acuminate, ancipitose, becoming scarious with time. **Inflorescence** apical, flowering only once, racemose, arching-nutant, densely many-flowered; peduncle, thin, laterally compressed, straight, nearly totally hidden within the spathaceous bracts. **Floral bracts** linear-triangular, acuminate, nearly twice as long as the ovary to progressively shorter. **Flowers** 26-60, rapidly opening in succession from the apex towards the base of the raceme, finally simultaneous, the lip always oriented towards the rachis, sepals and petals greenish dorsally, brown-orange ventrally, lip brown-orange, column white; diurnal fragrance sweet, tenuous. **Ovary** terete, thin, smooth. **Sepals** partly spreading, free, ovate-elliptic, acute, margin entire, fleshy, 3-veined; **lateral sepals** slightly oblique, with a prominent dorsal keel at the apex. **Petals** spreading, free, linear-oblanceolate, acute, fleshy, margin entire, 1-veined. **Lip** united to the column, 3-lobed, fleshy, base cordate, margin entire; bicallose, the calli thin, fleshy, reaching the base of the midlobe, with a thick, short mid-keel; lateral lobes transversely ovate-elliptic, erect in natural position; midlobe triangular, acute, short, wide. **Column** straight, short, thick, ending in a pair of rounded lobes. **Clinandrium-hood** reduced, margin entire. **Anther** subreniform, with a low, rounded keel in front, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal, caudicles soft and granulose, shorter than the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Nectary** shallow, barely penetrating the ovary, smooth.

OTHER SPECIMENS: Presumably **ECUADOR: Azuay:** Purchased at Expo Bogotá '92, X 1992, cultivated at Colomborquídeas, Medellín, then taken to Mexico City, 25 III 1996, pressed 12 VII 1996, *Hágsater 11547*, AMO! (Illustration voucher) Ibid. *Hágsater 11563;* pressed 12 IX 1997, MO! QCA! Ibid. pressed 3 X 1997, AMO! COL! QCNE! **El Oro:** Cushcapa, SW de Santa Isabel, 2000 m, 25 IX 2004, *Hirtz 9064*, AMO!

OTHER RECORDS: ECUADOR: Loja: Río Jubones, SW de Santa Isabel, 25 IX 2004, *Sánchez s.n.*, digital photographs, AMO! (corresponds to *A. Hirtz, E. Sánchez, W. & J. Coeck 9064.*)

DISTRIBUTION AND ECOLOGY: Apparently endemic to southwestern Ecuador, on the Pacific slope of the Andes southeast of Cuenca. For nearly 10 years it had been an enigma as to where the plants cultivated at Colomboquídeas could have originated. None of the specimens studied in the herbaria in Bogotá corresponded to this entity. Recently Dr. Eduardo Sánchez and Alex Hirtz collected a couple of plants along the Río Jubones, in the valley of Yunguilla in the province of Loja in southern Ecuador. In the early 90's a number of orchid species from southern Ecuador turned up in Medellín and Bogotá as *materos* were traveling to Ecuador to get prime saleable material for the Colombian amateurs who were eager to get species other than the local fare. It appears that is how these plants ended up in cultivation in Medellín.

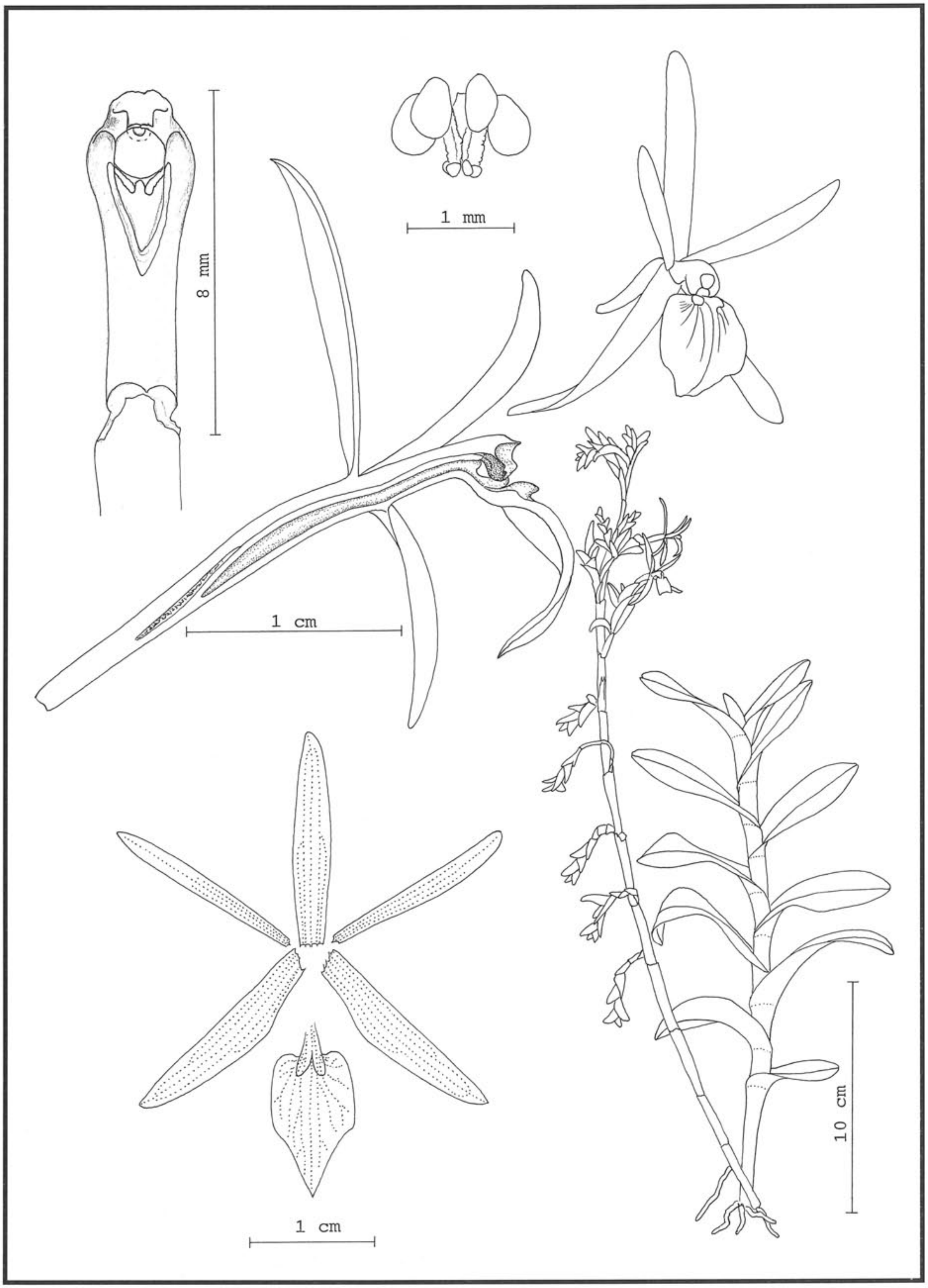


RECOGNITION: *Epidendrum aenigmaticum* belongs to the Alpicolum Group and Subgroup which is characterized by the simple, cane-like stems, long, narrow 1-2 spathaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip, triangular midlobe and roundish lateral lobes. The new species is recognized by the small flowers, ochre-orange colored inside, the lateral sepals 6.8-7.5 mm long, the transversely ovate-elliptic lateral lobes of the lip are upright, with the margin entire, and the midlobe is short and wide. It is similar to *E. tenquendamae* F.Lehm. & Kraenzl. which has narrower linear-lanceolate leaves, the flowers somewhat larger and proportionately narrower, sepals 7-8 mm long, linear-lanceolate, 6 mm petals, and the callus of the lip somewhat shorter. *Epidendrum cornutum* Lindl. is larger and proportionately narrower overall, the lateral sepals are 9-10.5 mm long, and the midlobe of the lip nearly 4 mm long. Many other species in this group have the margin of the lateral lobes of the lip erose with the forward corner fimbriate.

ETYMOLOGY: From the Greek αινιγμα, enigma, in reference to the undiscovered origin of this species, now apparently clarified.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM ALBERTII Schltr. Plate 903

EPIDENDRUM ALBERTII Schltr., Repert. Sp. Nov. Regni Veg. Beih. 19: 208. 1923.

Type: COSTA RICA: [Alajuela]: Los Angeles de San Ramon, 1000 m, July 1921, ***Alberto M. Brenes 49.*** Holotype: B (destroyed). Lectotype: designated by Barringer in Fieldiana, Bot. 17: 6. 1986, AMES 28818! Isolectotype: CR!

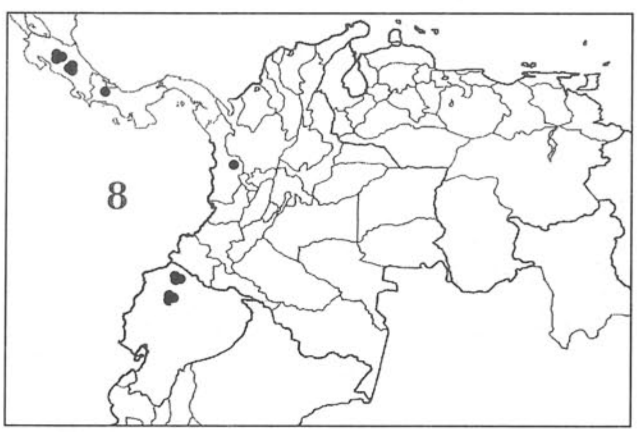
Hierba terrestre, raramente litófita o epífita, simpodial, cespitosa, erecta, 26-50 [70] cm de alto. **Raíces** basales, delgadas, blancas, 1-2.4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados arriba, erectos, rectos, 24-65 cm de alto. **Hojas** numerosas, distribuidas a lo largo del tallo, alternas, articuladas, erecto extendidas, caedizas; vainas tubulares, algo infladas en el ápice, lateralmente aplanadas, ancipitosas, estriadas, fibrosas con el tiempo, 1-2.8 x 0.4-1.2 cm; lámina angostamente elíptica a ovado elíptica, obtusa a subaguda, margen entero, la superficie dorsal teñida de rojizo o púrpura intenso, coriácea, 2.8-7.7 x 2-3.9 cm. **Brácteas espatáceas** 1-2, en el ápice del pedúnculo de la inflorescencia apical, oblongas, subagudas, tubulares en la base, conduplicadas, ancipitosas, 1.8-4 x 0.7-1.1 cm. **Inflorescencias** apicales y laterales, racemosas, cortas, compactas, paucifloras, produciendo nuevos racimos a lo largo de varias temporadas; 4-6.5 cm de largo; pedúnculo de la inflorescencia apical corto, lateralmente aplanado, ancipitoso, 5-7 mm de largo, provisto en el ápice de una o dos brácteas espatáceas prominentes; pedúnculo de las inflorescencias laterales 1-3 cm de largo, oculto en su totalidad por varias brácteas tubulares en la base, redondeadas en el ápice, imbricadas, 5-15 mm de largo; raquis totalmente oculto por las brácteas florales. **Brácteas florales** más cortas que el ovario, ovado elípticas, conduplicadas, obtusas, imbricadas, 6-10 [15] mm de largo. **Flores** 3-4 por racimo, sucesivas, se desarrollan una a una por racimo, resupinadas, verdosas teñidas de rojizo, cobrizas, raramente blanco amarillentas, el labelo generalmente blanco; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, [10-12] 19-23 mm de largo. **Sépalos** extendidos, libres, ligeramente convexos, oblongo lanceolados, subagudos a redondeados, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido, entero, 12-14.5 [17-18] x 2.2-3.3 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, lineares, algo angostos en la base, algo falcados, obtusos, 1-3 nervados, margen extendido, entero, 12-12.5 [16-18] x 1.5-1.8 mm. **Labelo** unido a la columna, entero, algo convexo, muy levemente cordado en la base, oblongo ovado, agudo, margen entero, extendido, 6-9 [11-12] x 4-7 mm; bicalloso, los callos laminares, prominentes; lámina provista de 12 quillas radiantes en toda la superficie de la misma, (las 3 centrales alargadas hasta la mitad del labelo, las laterales gradualmente más cortas). **Columna** muy delgada en la base, engrosada y fuertemente arqueada en el ápice, 5-8 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el cuerpo de la columna), cubriendo parcialmente a la antera, margen subentero. **Antera** no vista. **Polinios** 4, obovoides; caudículas suaves y granulosas, algo más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de la mitad del largo de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no inflado, liso. **Cápsula** angostamente elipsoide, cuerpo 15 x 4 mm; pedicelo delgado, terete, 12 mm de largo; cuello apical 10 mm de largo.

Terrestrial, sympodial, caespitose, erect, rarely lithophytic or epiphytic **herb. Roots** basal, thin, white. **Stems** simple, cane-like, terete at the base, laterally compressed above, erect, straight. **Leaves** numerous, distributed throughout the stem, alternate, articulate, erect-spreading, deciduous; sheaths tubular, somewhat inflated at the apex, laterally compressed, ancipitose, striated, becoming fibrous with time; blade narrowly elliptic to ovate-elliptic, obtuse to subacute, margin entire, coriaceous, the dorsal surface intense reddish or purple. **Inflorescences** apical and lateral, racemose, short, compact, few-flowered, producing new racemes over several years; peduncle of the apical inflorescence short, laterally compressed, ancipitose, provided with 1-2 prominent, spathaceous bracts at the apex of the peduncle; peduncle of the lateral inflorescences short, totally hidden by several imbricating bracts, tubular below, rounded at the apex; rachis totally hidden by the floral bracts. **Floral bracts** shorter than the ovary, ovate-elliptic, conduplicate, obtuse, imbricating. **Flowers** 3-4 per raceme, successive, developing one at a time from each raceme, resupinate, greenish tinged reddish, copper-colored, rarely yellowish white, the lip usually white. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, slightly convex, oblong-lanceolate, subacute to rounded, 3-veined, the lateral veins branching from the base and thus appear 5-veined, margin spreading, entire; the lateral sepals oblique. **Petals** partly spreading, free, linear, somewhat narrower at the base, somewhat falcate, obtuse, 1-3-veined, margin spreading, entire. **Lip** united to the column, entire, somewhat convex, slightly cordate at the base, oblong-ovate, acute, margin entire, spreading; bicallose, the calli prominent, laminar; blade provided with 12 radiating keels covering nearly the whole surface, (the 3 central keels elongate, reaching de middle of the lip, the lateral ones gradually shorter). **Column** very thin at the base, thickened and strongly arching at the apex. **Clinandrium-hood** prominent, without surpassing the body of the column, partically covering the anther, margin subentire. **Pollinia** 4, obovoid; caudicles soft and granulose, somewhat longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating ½ the ovary, not inflated, smooth. **Capsule** narrowly ellipsoid, pedicel thin, terete; apical neck prominent.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUCION AND ECOLOGY: Ranging from central Costa Rica through Panama and the western Colombia (Chocó) to western Ecuador. Terrestrial, rarely lithophytic or epiphytic, at [750] 900-1600 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum albertii* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, and the conduplicate, imbricating floral bracts producing one flower at a time, and the Albertii Subgroup, which has apical and more commonly short, lateral inflorescences, with several progressively longer, imbricating bracts covering the short peduncle; the flowers are membranaceous, delicate, generally successive, one developing at a time from each raceme. The species is recognized by its narrowly elliptic to ovate-elliptic leaves, dorsally tinged reddish or purple, the apical inflorescence with 1-2 prominent spathaceous bracts at the apex of the peduncle, short, rounded floral bracts, 12-14.5 [17-18] mm-long sepals, the flowers generally tinged reddish, the white lip oblong-ovate, acute, with 12 radiating keels, and the column strongly arched at the apex. *Epidendrum phyllocharis* Rchb.f. is vegetatively very similar, but has white flowers, rarely pale green tinged with reddish, the lip pentagonal-suborbicular with 5 radiating keels, the apex truncate and minutely apiculate, and the column slightly arched. *Epidendrum hexagonum* Hágsater & Dodson has concolor, somewhat pale-green, elliptic-lanceolate leaves 13-18 cm long, and green colored flowers (same color as the leaves) with a hexagonal lip, devoid of any keels, and a straight column. *Epidendrum ingramii* Hágsater & García-Cruz has acuminate floral bracts, 21-25 mm long sepals, and a narrowly cordiform, acuminate lip.



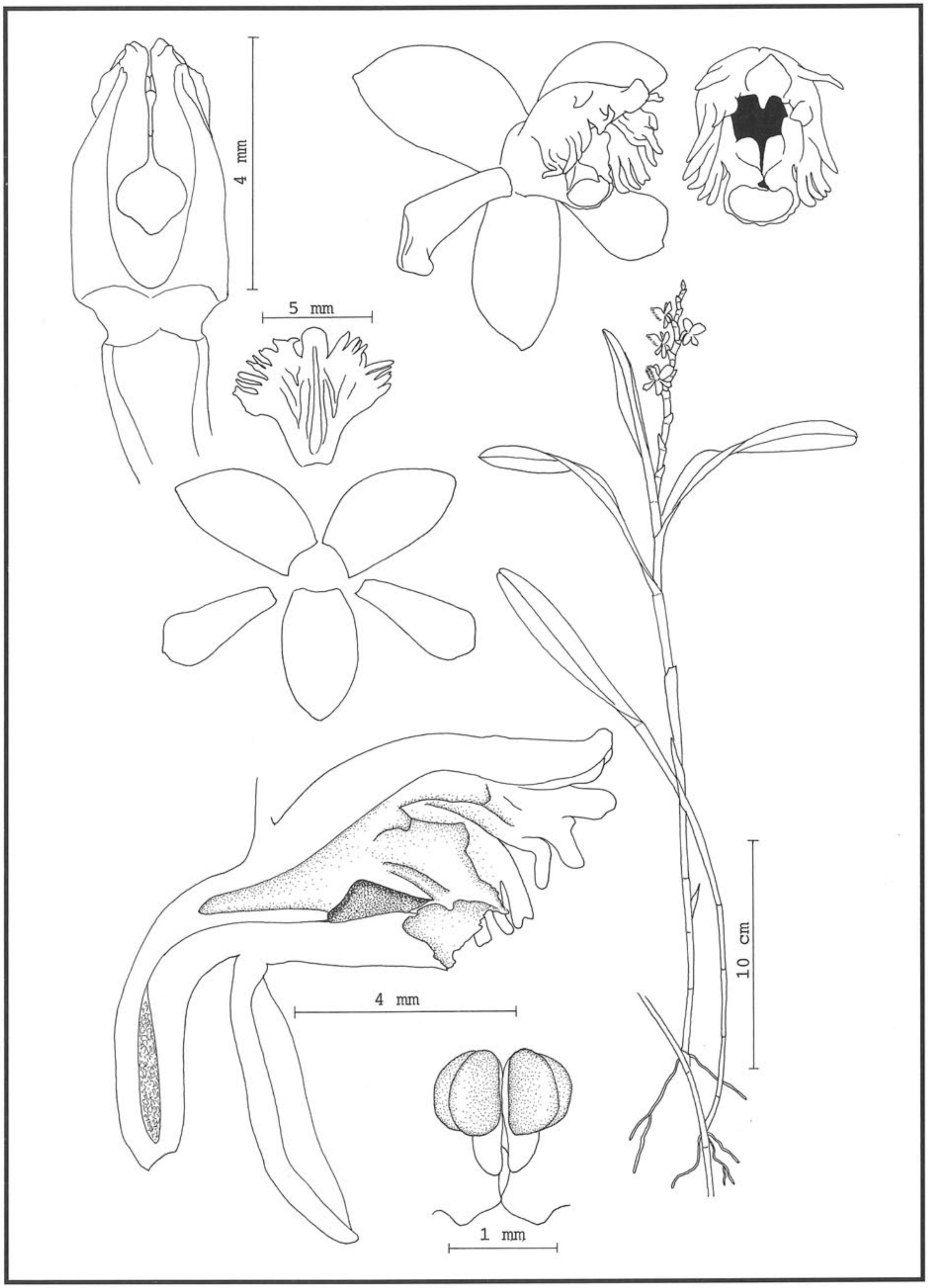
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor al Alberto M. Brenes (1870-1948), Costarican botanist, curator of the herbarium at the Museo Nacional (CR), who sent numerous specimens to Rudolf Schlechter. He collected mainly around San Ramón.

REFERENCES: Dodson, C.H & P.M. Dodson, 1980. *Epidendrum albertii* Schltr. **Icones Pl. Trop.** 4: 373.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM ALFAROI Ames & C.Schweinf.

Plate 904

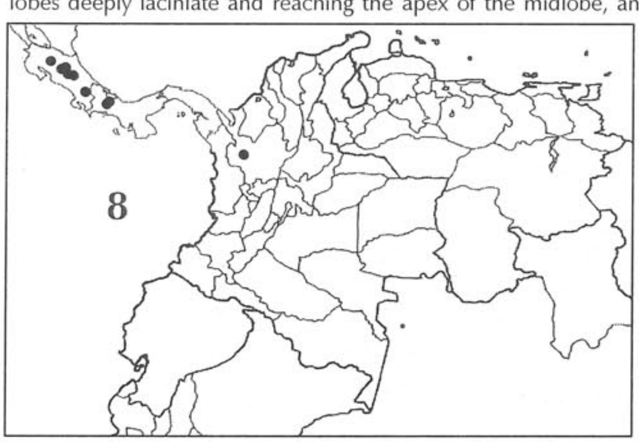
EPIDENDRUM ALFAROI Ames & C.Schweinf., Schedul. Orch. 10: 55. 1930.

Type: COSTA RICA: La Fuente, 1200 m, 23 August 1925, ***Anastasio Alfaro 174***. Holotype: AMES! (Illustration of floral segments of type attached to *Lankester s.n.,* SEL 9559!)
Synonyms: *Epidanthus alfaroi* (Ames & C.Schweinf.) Garay, Orch. Digest. 41(1): 22. 1977.
Neowilliamsia alfaroi (Ames & C.Schweinf.) Dressler, Orquídea (Mexico City) 8(1): 28. 1981.

Hierba epífita, simpodial, rastrera a subcespitosa, 15-30 cm de alto. **Raíces** originándose a lo largo de los entrenudos basales de cada tallo, delgadas, carnosas, blancas, 0.3-1 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales de tallos anteriores, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, delgados, erectos a ligeramente arqueados, rectos, 8-22 x 0.15-0.5 cm; cubiertos abajo por 2-5 vainas tubulares no foliáceas, fibrosas con el tiempo, 7-50 mm de largo. **Hojas** 1-3, distribuidas hacia el ápice de los tallos, suberectas, alternas, articuladas; vaina tubular, aguda, finamente estriada, 1.2-5.5 x 0.2-0.5 cm; lámina oblongo elíptica, redondeada, bilobada y apiculada, coriácea, margen entero, 3-14 x 0.9-1.9 cm; con una lígula muy evidente del lado opuesto de la lámina, triangular, subaguda, 0.9-1.7 mm de largo. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa (raramente puede llegar a producir una rama muy corta en la base del racimo principal), erecta a ligeramente arqueada, pauciflora, laxa, florece una sola vez, 6-16 cm de largo; pedúnculo recto, ancipitoso, 2-4.5 cm de largo, provisto en la parte media de una bráctea (semejante a las florales) tubular en la base, conduplicada en el ápice, aguda, ancipitosa, 5-12 x 3-3.5 mm; raquis fractiflexo, ancipitoso, 4.5-11 cm de largo. **Brácteas florales** de la mitad a casi tan largas como el ovario, anchamente triangulares, agudas, amplexicaules, ligeramente ancipitosas, gradualmente más pequeñas, 2-6 mm de largo. **Ovario** terete, delgado, ligeramente arqueado, no inflado, no ornamentado, 5-6 mm de largo. **Flores** 4-13, simultáneas, no resupinadas, dísticas, carnosas, sépalos y pétalos de color variable, comúnmente naranja amarillentos manchados de pardo en la superficie ventral, raramente blancos o verdosos, labelo blanco con ápices de lacinias teñidos de violeta; con fragancia a *Gardenia*. **Sépalos** extendidos, libres, obovado elípticos, ápice subagudo, 9-nervados, margen entero, 6 x 3.4-3.9 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, cuneado espatulados, ápice redondeado, diminutamente apiculado, 7-nervados, margen entero, 5-6 x 2.5-3 mm. **Labelo** unido a la mitad basal de la columna, flabeliforme, al extenderse formando medio círculo, trilobado, cortamente unguiculado, fuertemente cóncavo en posición natural, abrazando a la columna (sin envolverla por completo), 5-6 x 7.2-8 mm; ecalloso, disco provisto de 3 quillas, delgadas, la central alargada hasta la base del lóbulo medio, el par lateral más corto; lóbulos laterales laciniado digitados, 3.7 x 3.2 mm; lóbulo medio mucho más pequeño, sin sobresalir, algo carnoso, subcuadrado, ápice redondeado, margen entero, 1.2-1.5 x 1.1-1.2 mm. **Columna** recta, gruesa; 4 mm de largo. **Clinandrio** corto, en forma de embudo, margen irregular. **Antera** obovoide, 4-locular. **Polinios** 4, ovoides, lateralmente aplanados, caudículas laminares, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** apenas penetrando el ovario, triangular, no inflado, no ornamentado. **Cápsula** no vista.

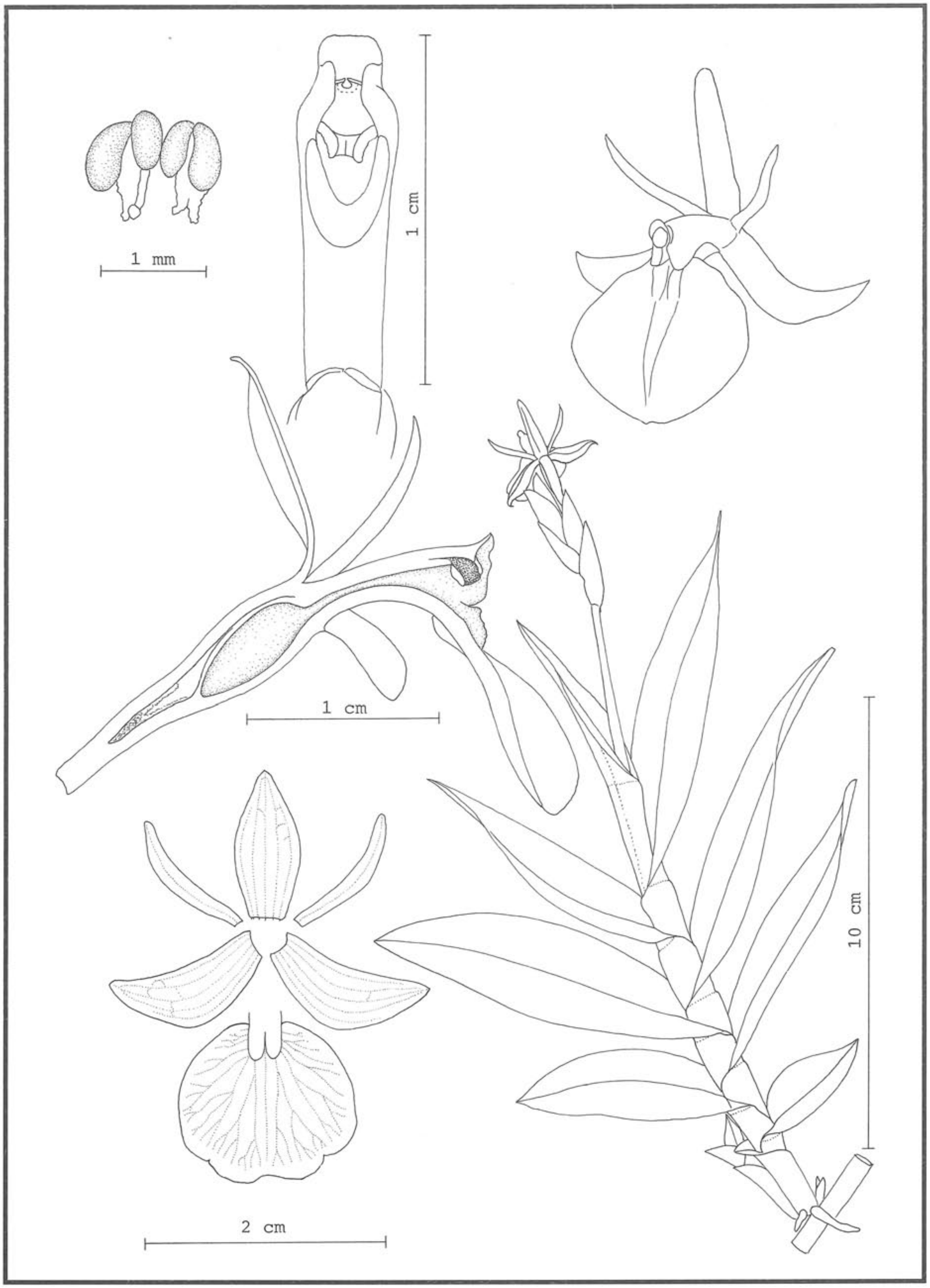
Epiphytic, sympodial, straggling to subcaespitose **herb. Roots** from the basal internodes of each stem, thin, fleshy, white. **Stems** simple, produced from the lower internodes of the previous stem, cane-like, terete at the base, laterally compressed above, thin, erect to slightly arching, straight; covered below by 2-5 tubular, non-foliaceous sheaths, the sheaths becoming fibrous with time. **Leaves** 1-3, distributed towards the apex of the stems, suberect, alternate, articulate, sheath tubular, acute, minutely striated; blade oblong-elliptic, rounded, bilobed and apiculate, coriaceous, margin entire. **Inflorescence** apical, racemose, (rarely producing a short branch at the base of the main raceme), erect to slightly arching, lax few-flowered, flowering only once; peduncle straight, ancipitose, provided with a bract in the middle, the bract similar to the floral bracts; rachis zigzag, ancipitose. **Floral bracts** half as long as the ovary, widely triangular, amplexicaul, slightly ancipitose, gradually shorter. **Ovary** terete, thin, slightly arching, not inflated, smooth. **Flowers** 4-13, simultaneous, non-resupinate, distichous, fleshy, sepals and petals generally yellowish orange, ventrally tinged with brown, rarely white or greenish, lip white with apices of lacinia tinged violet; fragrant, of *Gardenia*. **Sepals** spreading, free, obovate-elliptic, apex subacute, 9-veined, margin entire, the lateral sepals oblique. **Petals** spreading, free, cuneate-spatulate, apex rounded, minutely apiculate, 7-veined, margin entire. **Lip** united to the basal half of the column, flabelliform in outline, forming a half circle, 3-lobed, short unguiculate, strongly concave, embracing the column in natural position (without covering it); ecallose, disc provided with 3 thin keels, the mid-keel reaching the base of the midlobe, the lateral pair shorter; lateral lobes laciniate-digitate, midlobe much smaller, subquadrate, somewhat fleshy, apex rounded, margin entire. **Column** straight, thick. **Clinandrium-hood** short, funnel-shaped, margin irregular. **Anther** obovoid, 4-celled. **Pollinia** 4, ovoid, laterally compressed; caudicles laminar, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** barely penetrating the ovary, triangular, not inflated, smooth.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.
DISTRIBUTION AND ECOLOGY: Found along the cordillera from Costa Rica to northern Pacific watershed of the Cordillera Occidental of Colombia, growing epiphytic at [450] 700-1800 m altitude. Flowering February to March and July to October.
RECOGNITION: *Epidendrum alfaroi* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, usually non-resupinate flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized by relatively short plants (to 30 cm tall), with 1-3 apical leaves, racemose inflorescence, the flowers generally yellowish orange spotted with brown, the lip 3-lobed with the lateral lobes deeply laciniate and reaching the apex of the midlobe, and 4 pollinia. *Epidendrum wercklei* Schltr. has larger plants with a paniculate, many-flowered inflorescence, with up to 150 white to greenish white flowers with brown-purple spots, the lateral lobes of the lip somewhat shorter than the midlobe, and 2 pollinia. *Epidendrum philowercklei* Hágsater & E.Santiago is vegetatively similar, has been confused with *E. wercklei*, has a very wide aperture at the apex of the column, and the flowers are yellow-ochre to yellowish green with transverse reddish brown bars.



CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: In honor of Anastasio Alfaro (1865-1951), costarican naturalist and arqueologist, who collected numerous orchid specimens, especially during the 1890's, and later shared material with Charles Lankester and Oakes Ames.

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EPIDENDRUM ALLENII L.O.Williams

Plate 905

EPIDENDRUM ALLENII L.O.Williams, Ann. Missouri Bot. Gard. 28: 418. 1941.

Type: PANAMÁ: Coclé: Hills north of El Valle de Antón, ca. 1000 m, 14 July 1940, ***Paul H. Allen 2203.*** Holotype: AMES!

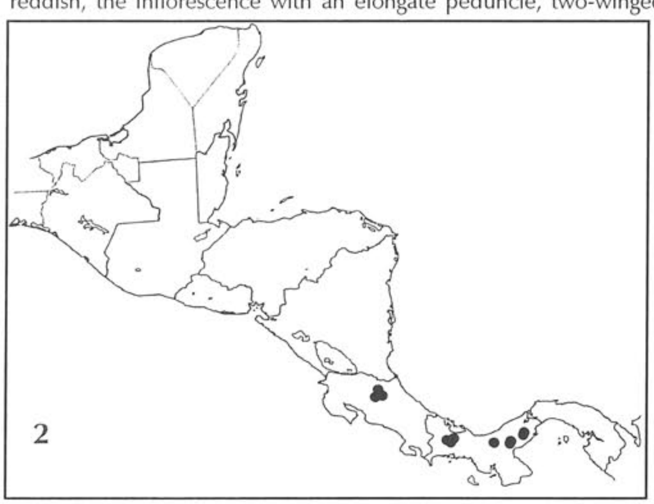
Hierba epífita, simpodial, cespitosa, de 20-38 cm de alto. **Raíces** basales, carnosas, delgadas, de 0.6-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados y ancipitosos arriba, erectos, rectos, 10-17 x 0.13-0.35 cm. **Hojas** 5-9, distribuidas a lo largo del tallo, alternas, articuladas, suberectas, duraderas, subcoriáceas; vainas tubulares, algo expandidas en el ápice sin llegar a ser infundibuliformes, lateralmente aplanadas, ancipitosas, finamente estriadas, verde oscuro teñidas de púrpura, 1.2-3.2 x 0.4-1 cm; lámina elíptica a lanceolada, aguda a cortamente acuminada, margen entero, de color verde oscuro dorsalmente y ocasionalmente el ápice teñido de rojizo, la basal más pequeña, 4-13.5 x 1.2-2.6 cm. **Bráctea espatácea** generalmente 1, ubicada cerca del ápice del pedúnculo, ovado lanceolada, aguda, tubular en la base y conduplicada en la mitad apical, ancipitosa, semejante a las brácteas florales pero más grande, 1.5-3.7 x 0.4-0.5 cm. **Inflorescencia** apical, erecta, dística, 6.5-23 cm de largo, racemosa en la primera floración, originando nuevos racimos dentro de la bráctea espatácea a lo largo de varias temporadas y entonces pluriracemosa; pedúnculo alargado, lateralmente aplanado, ancipitoso, bialado, las alas prominentes hacia la base, progresivamente más angostas hacia el ápice, 4.5-17.5 cm de largo; raquis terete, delgado, totalmente oculto por las brácteas florales, 2-6 cm de largo. **Brácteas florales** más cortas que el ovario, ovado elípticas, obtusas, conduplicadas, imbricadas, persistentes aún sin flores, 6-14 x 3-4 mm. **Ovario** terete, delgado, liso, inflado ventralmente en la mitad apical, 12-16 mm de largo. **Flores** 3-17 por racimo, sucesivas, desarrollándose una a una, resupinadas, sépalos y pétalos rosado pálido a verdosos, labelo blanco, sin datos de fragancia. **Sépalos** extendidos, libres, elípticos a lanceolados, obtusos, diminutamente apiculados, 5-nervados, margen entero, revoluto, 10-13.5 x 4-5.5 mm; los **laterales** algo falcados. **Pétalos** extendidos, libres, lineares, redondeados, 1-nervados, falcados, margen entero, algo revoluto, 10-11 x 0.75-1.5 mm. **Labelo** unido a la columna, subentero u obscuramente trilobado, en aspecto general subreniforme, base truncada, margen extendido, entero, 10-12 x 12-15 mm; bicalloso, callos carnosos, delgados; lóbulos laterales incipientes, hemiobovados, redondeados, 6 x 10 mm; lóbulo medio muy corto, bilobado, los lóbulos pequeños y redondeados, 2 x 9 mm. **Columna** delgada en la base gradualmente engrosada hacia el ápice, ligeramente arqueada, 7 mm de largo. **Clinandrio** prominente (sobrepasando levemente el cuerpo de la columna), margen entero, ligeramente ondulado. **Antera** no vista. **Polinios** 4, obovoides, oblicuos, subiguales; caudículas suaves y granulosas, algo más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños. **Nectario** penetrando hasta la mitad del ovario, inflado, liso. **Cápsula** angostamente elipsoide, cuerpo 9 x 6 mm; pedicelo terete, delgado, 5 mm de largo.

Epiphitic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete at the base to laterally compressed and ancipitose above, erect, straight. **Leaves** 5-9, distributed throughout the stem, alternate, articulate, suberect, long lasting, subcoriaceous; sheaths tubular, somewhat expanded towards the apex, laterally compressed, ancipitose, minutely striated, deep green tinged purple; blade elliptic to lanceolate, acute to short acuminate, margin entire, dark green, the underside and sometimes the apex tinged reddish, the basal leaves smaller. **Spathaceous bract** generally 1, near the apex of the peduncle, lanceolate-ovate, acute, tubular at the base and conduplicate at the apical half, ancipitose, similar to the floral bracts but about twice larger. **Inflorescence** apical, erect, distichous, racemose at first flowering, producing new racemes over several years originating from within the spathaceous and thus becoming pluriracemose; peduncle elongate, laterally compressed, ancipitose, two-winged, the wings prominent towards the base and gradually narrower towards the apex; rachis terete, thin, totally hidden by the floral bracts. **Floral bracts** shorter than the ovary, elliptic-ovate, obtuse, conduplicate, imbricating, persistent even after flowering. **Ovary** terete, thin, smooth, ventrally inflated along the apical half. **Flowers** 3-17 per raceme, successive, developing one by one per raceme, resupinate, sepals and petals pale pink to greenish, lip white. **Sepals** spreading, free, elliptic to lanceolate, obtuse, minutely apiculate, 5-veined, margin entire, revolute, the lateral sepals somewhat falcate. **Petals** spreading, free, linear, rounded, 1-veined, falcate, margin entire, somewhat revolute. **Lip** united to the column, subentire to obscurely 3-lobed, generally subreniform, base truncate, margin spreading, entire; bicallose, calli fleshy, thin; lateral lobes hemiobovate, rounded, large, midlobe very short and wide, bilobed, the lobes small and rounded. **Column** thin at the base and gradually thickened towards the apex, slightly arched. **Clinandrium-hood** prominent, slightly surpassing the body of the column, margin entire, slightly undulate. **Pollinia** 4, obovoid, oblique, subequal; caudicles soft and granulose, somewhat longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating half the ovary, inflated, smooth. **Capsule** narrowly ellipsoid.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from central Panama, along the continental divide, and from the Atlantic slope on the Cordillera Central in Costa Rica. Epiphyte in wet forests at 600-1200 m altitude. Flowering from August to January, March, June.

RECOGNITION: *Epidendrum allenii* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the apical inflorescence (rarely lateral), peduncle elongate, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricating, bracts. The species is recognized by the elliptic to lanceolate, acute to short acuminate, deep green leaves, the underside and sometimes the apex tinged reddish, the inflorescence with an elongate peduncle, two-winged, the wings progressively shorter, pale pink to greenish sepals and petals, the lip white, obscurely 3-lobed, (10-12 x 12-15 mm) with the midlobe short and short-bilobed. *Epidendrum jefeallenii* Hágsater & García-Cruz has narrower (0.5-1.8 cm wide), linear-lanceolate, long-acuminate, pale green leaves, the lip generally cordiform, with a pair of obscure sinii at the apex. *Epidendrum panamense* Schltr. has somewhat smaller plants (9-21 cm tall), narrowers, lanceolate leaves (0.8-1.7 [2] cm wide), the sepals oblanceolate with the margin spreading, and the lip entire, widely ovate-cordiform, small, 3.5-5 x 3.5-5.7 mm. *Epidendrum maduroi* Hágsater & García-Cruz is vegetatively very similar, but the plants somewhat larger, the leaves elliptic-lanceolate, 13-23 x 1.8-2.9 cm, and the lip small, entire, subreniform overall, 5-6.6 x 6-8 mm.

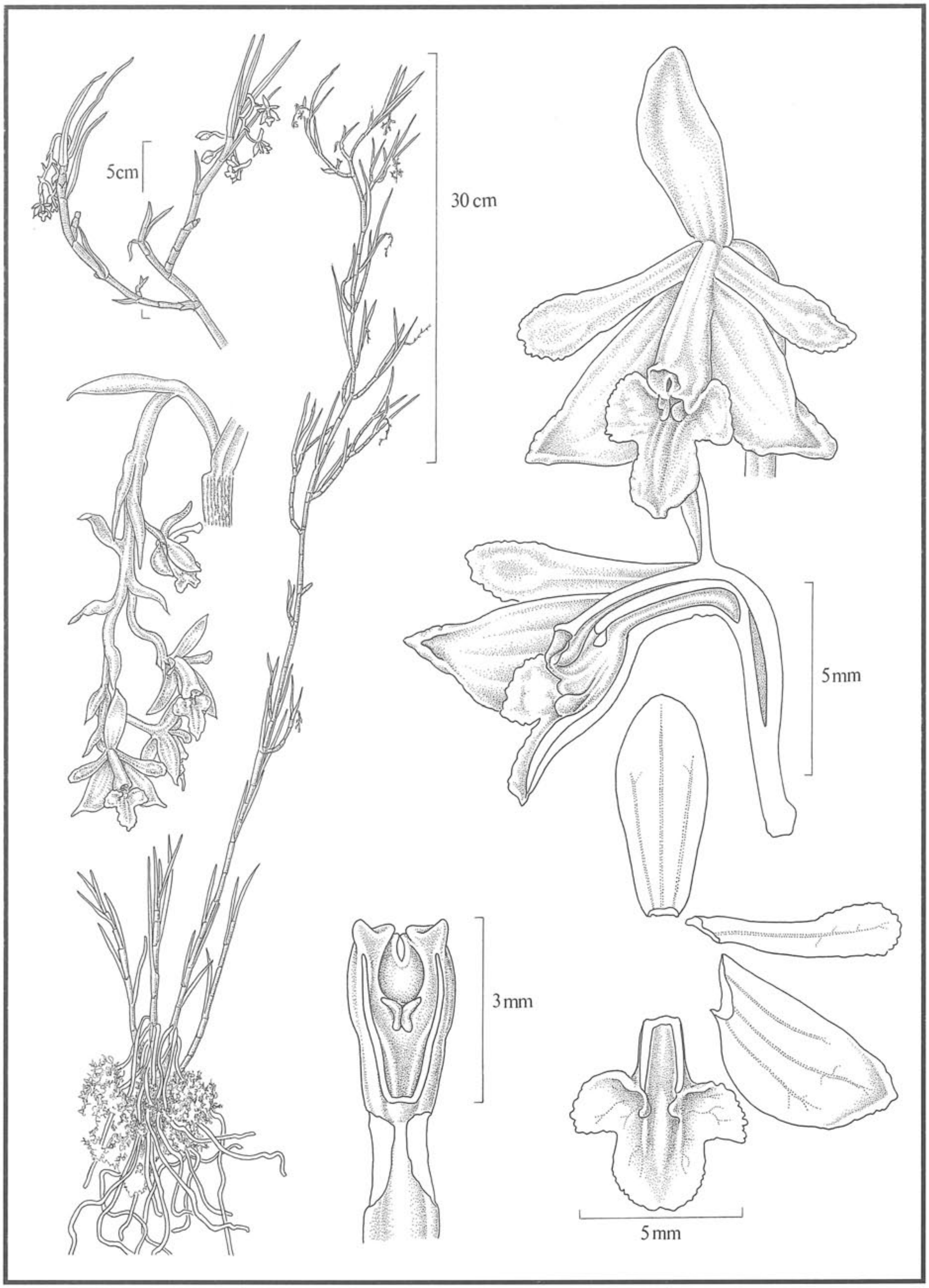


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Paul H. Allen, who collected mainly in Panama between 1935 and 1947, and later in Costa Rica and Honduras. He collected the type material.

REFERENCES: Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 283, San José C.R. Editorial de la Universidad de Costa Rica.

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EPIDENDRUM ANGUSTISSIMUM Lindl. **Plate 906**

EPIDENDRUM ANGUSTISSIMUM Lindl., Fol. Orch. Epid. 84. 1852.

Type: COLOMBIA: [Tolima]: Province of Mariquita, ***Triana 128***, Holotype: K-L. Isotype: W! tracing W! Synonym: *Epidendrum chortophyllum* Schltr., Repert. Spec. Nov. Regni Veg., Beih. 8: 69. 1921. Type: ECUADOR: Pichincha: Prope Oyacachi, ***A. Sodiro 20.*** Holotype: B, destroyed. Lectotype:,QPLS! (Designated by Dodson & Hágsater in Jørgensen, P. M., & S. Léon Yáñez, Eds. Catalogue of the Vascular Plants of Ecuador, Monog. Syst. Bot. Mo. Bot. Gard. 75: 663. 1999.) Isotype: P!

Hierba epífita, monopodial, de simpodio erecto, ramificado, 25-70 cm de alto. **Raíces** carnosas, desde la base del tallo principal, 2.0-2.5 mm de grosor. **Tallos** ramificados, tipo caña, teretes, delgados, más o menos rectos; los principales 11-60 x 0.13-0.24 cm, produciendo tallos secundarios de los entrenudos intermedios y subapicales del mismo y de los secundarios, cada vez de menor tamaño, los tallos secundarios de 3-11 entrenudos, 1.8-10 x 0.15-0.25 cm. **Hojas** numerosas, distribuidas a todo lo largo de los tallos; vaina tubular, estriada, rugosa, teñida de morado, 0.3-2.6 cm de largo; lámina articulada, linear lanceolada, acuminada, margen apical finamente papiloso, subcoriácea, las del tallo principal en general más grandes 3.3-10 x 0.2-0.4 cm; las de las ramas 1.6-3.3[5.5] x 0.13-0.25[3.0] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, erecta a arqueado nutante, densa, 2.7-6.0[7.5] cm de largo; sin brácteas en la base del pedúnculo, raquis terete, delgado. **Brácteas florales** más cortas que el ovario, lanceoladas, acuminadas, gradualmente más cortas, 2-7 mm de largo. **Flores** 10-16, simultaneas, pero abren sucesivamente, resupinadas, color amarillo claro. **Ovario** no inflado, terete, no ornamentado, 5-11 mm de largo. **Sépalos** libres, extendidos, redondeados, apiculados, con una quilla dorsal, 3-nervados, margenes enteros; el **dorsal** obovado a ligulado elíptico, 5-6.7 x 2.4-3.0 mm, los **laterales** ligulado obovados, oblicuos, 5.0-6.7 x 2.5-3.3 mm. **Pétalos** ligulados, ligeramente dilatados hacia el ápice redondeado, 1-nervados, márgenes apicales serrulados, 5-6 x 1.0-1.8 mm. **Labelo** unido a la columna, trilobado, ligeramente cordado en la base, margen eroso crenado, 3.5 x 3.5 mm; bicalloso, los callos globosos, pequeños; lobulos laterales semiorbiculares, redondeados a terminados en un ángulo recto, 1.0-1.8 x 1.5-2.5 mm, lóbulo medio subcuadrado, redondeado, diminutamente apiculado, 2.3 x 2.9 mm. **Columna** recta, dilatada hacia el ápice, 3.0-5.0 mm de largo. **Clinandrio** corto, carnoso, margen entero. **Nectario** poco profundo, apenas penetrando el ovario. **Antera** subglobosa. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas granulosas, viscidio semilíquido. **Rostelo** apical, hendido. **Cápsula** globosa con pedicelo delgado de 3 mm de largo, cuerpo 11 x 6.5 mm, cuello apical 2.5 mm.

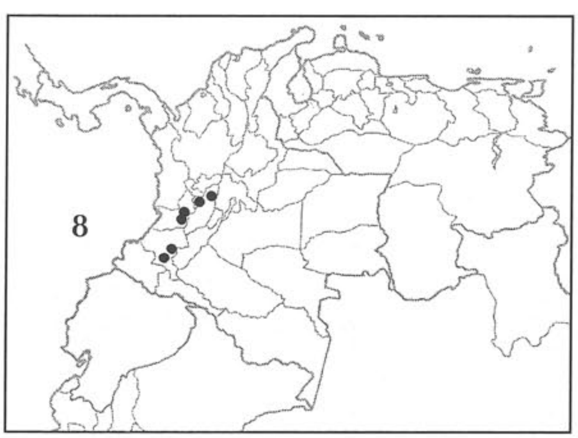
Epiphytic **herb**, monopodial, profusely branched, erect. **Stems** cane-like, terete, more or less straight, the main stem long, branching from the middle and upper internodes, secondary stems with 3-11 nodes and producing new stems. **Leaves** numerous, linear-lanceolate, acuminate, those on the main stem larger than those of the branches; leaf-sheaths striated, rugose, purple tinged. **Inflorescence** apical, racemose, erect to nodding, densely flowering, flowering only once. **Floral bracts** lanceolate, acuminate, shorter than the ovary. **Flowers** 10-16, simultaneous, resupinate, pale yellow. **Ovary** thin, smooth, not swollen. **Sepals** rounded, apiculate, 3-veined, margin entire; **dorsal** obovate to ligulate-elliptic; **laterals** free, elliptic to obovate elliptic, oblique, keeled. **Petals** linear, somewhat dilated towards the serrulate apex, 1-veined. **Lip** united to the column, three-lobed, slightly cordate, margin erose crenate; bicallose, the calli globose; lobes subequal or the lateral lobes somewhat smaller, semi-orbicular, rounded or ending in a right angle. **Column** straight. **Clinandrium-hood** short, fleshy, entire. **Nectary** slightly penetrating the ovary. **Anther** subglobose. **Pollinia** 4, obovoid, caudicles soft and granulose, viscidium semi-liquid. **Rostellum** apical, slit. **Capsule** globose with a thin, short pedicel and a short apical neck.

DISTRIBUTION AND ECOLOGY: Widespread along the Cordillera Central of Colombia from the Nevado de Tolima south into the interandean valley and upper eastern slopes of the eastern Cordillera of the Andes in Ecuador to Cuenca, at very high altitudes, 2900-3900 m, in Elfin forest on the edge of páramos, epiphytic, sometimes on *Polylepis sp.* and *Clusia sp.* Flowering throughout the year, mainly from September-January.

OTHER SPECIMENS: See appendix.

RECOGNITION: *Epidendrum angustissimum* belongs to the Scabrum Group, Cuniculatum Subgroup, which is characterized by the monopodial, branching habit, adpressed leaf-sheaths, acute leaves, small flowers and 3-lobed lip. The species is recognized by the very narrow leaves, (to 4 mm), the flowers distributed throughout the dense inflorescence, the 3-lobed lip, with semiobricular lateral lobes and serrulate margins, sepals 5.0-6.7 mm long. In central Ecuador it grows in the same region as *Epidendrum tenuicaule* Lindl. which has the same habit, clearly wider leaves (3.5-10 mm wide), the arching small inflorescence with greenish yellow, simultaneous flowers, the lateral lobes of the lip dolabriform. *Epidendrum cuniculatum* Schltr. has a deep nectary, a larger clinandrium-hood with the margin sinuous, and very short, reniform, lateral lobes of the lip, with a sinuous margin. *Epidendrum anthropophorum* Rchb.f. is vegetatively similar but the flowers have rectangular lateral lobes of the lip and the midlobe itself bilobed, thus giving the flowers a hominid-like appearance.

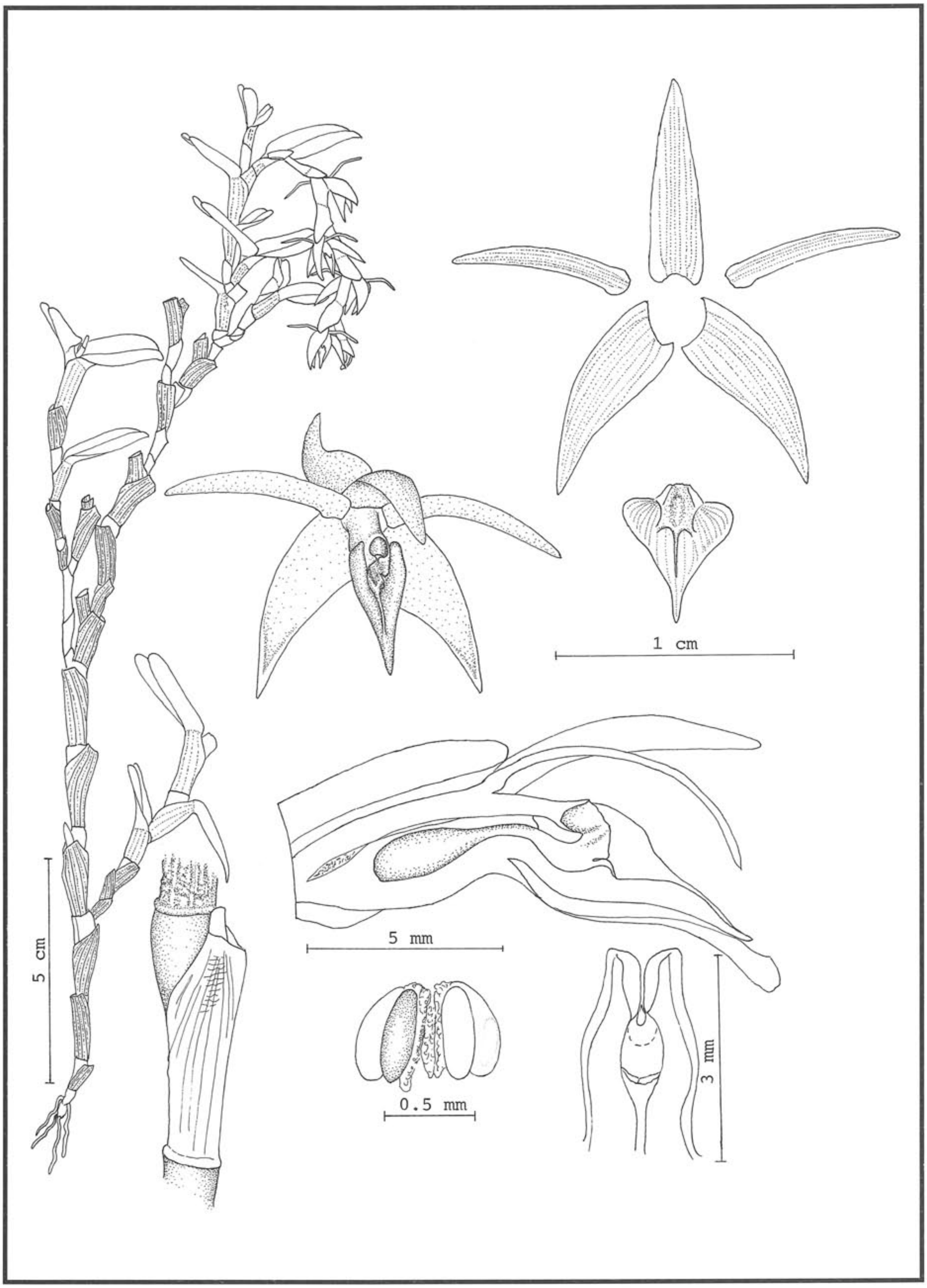
CONSERVATION STATUS: DD. Data deficient.



ETIMOLOGY: From the Latin *angustus*, narrow, in reference to the very narrow leaves.

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EPIDENDRUM ANOGLOSSOIDES Ames & C.Schweinf.

Plate 907

EPIDENDRUM ANOGLOSSOIDES Ames & C.Schweinf., Schedul. Orchid. 10: 56. 1930.

Type: COSTA RICA: Heredia: Cerros de Zurquí, Northeast of San Isidro, 2000-2400 m, 3 March 1926, ***Paul C. Standley & Juvenal Valerio 50731***. Holotype: AMES 33492! Isotype: US 1309614!

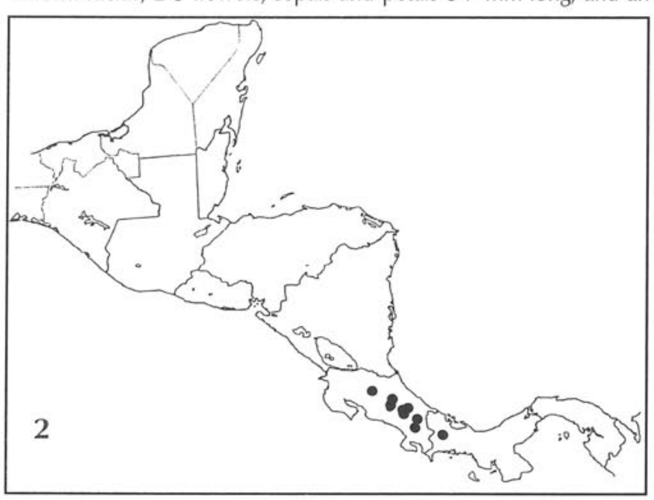
Hierba epífita, monopodial, ramificada, erecta, 20-50 cm de alto o más. **Raíces** producidas en los entrenudos inferiores del tallo principal, carnosas, 1-1.5 mm de grosor. **Tallos** ramificados, tipo caña, flexuosos, lateralmente comprimidos hacia el ápice, algo teretes hacia la base; de los entrenudos intermedios del tallo principal se producen varias ramas, y del entrenudo subapical de cada rama a su vez se producen otras ramas más cortas, en las que se produce la floración; las ramas más pequeñas, 4-11 x 0.2-0.4 cm. **Hojas** 4-10 en los tallos más largos, 1-5 en los más cortos, distribuidas a lo largo de cada tallo; vaina tubular a lateralmente comprimida, subcoriácea, rugosa, verrucosa, 0.5-2.3 cm de largo; lámina elíptico lanceolada, ápice desigualmente bilobado, dorsalmente carinada, margen entero, las de los tallos más grandes, 3-6 x 0.7-1 cm, las de las ramas menores, 1.2-3 x 0.4-0.7 cm. **Inflorescencia** apical del tallo principal cuando maduro y de las ramas, racemosa, dística, arqueada, nutante, 2.5-9 cm de largo; pedúnculo no ornamentado, muy corto, con una bráctea intermedia, similar a la florales; raquis en zigzag, lateralmente comprimido, elongado. **Brácteas florales** igual a más largas que el ovario, deltoides, ovadas, obtusas, conduplicadas, 6-10 mm de largo. **Flores** 3-10, dísticas, el labelo siempre orientado hacia la raquis, simultáneas, color verde amarillento, tornándose café al envejecer; fragancia diurna, ligera, metálica. **Ovario** inflado, terete, no ornamentado, 5 mm de largo. **Sépalos** entreabiertos, glabros, lanceolados, agudos, con una quilla dorsal apical, margen entero, extendido, 8-9 x 2-3 mm; el **dorsal** 6-nervado, los nervios laterales bifurcados; los **laterales** falcados, 7-nervados, con dos nervaduras secundarias pareciendo ser 9-nervados. **Pétalos** extendidos, linear lanceolados, agudos, algo falcados, 3-nervados, margen extendido, entero, 7.5-8.2 x 0.8-1 mm. **Labelo** unido a la columna, entero, triangular, acuminado, las esquinas basales redondeadas, 5.4-6 x 4.5-6 mm; tricalloso, el callo medio prolongándose más de la mitad del labelo. **Columna** recta, gruesa, 2.5-3 mm de largo. **Clinandrio** reducido, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, semiobovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, igual de largas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** muy cortos. **Nectario** profundo, penetrando más de 1/2 del ovario, no ornamentado, inflado. **Cápsula** no vista.

Epiphytic, monopodial, branching, erect **herb. Roots** produced from the lower internodes of the main stem, fleshy, thin. **Stems** branching, cane-like, flexuous, laterally compressed towards the apex, somewhat terete at the base; producing several short branches from the middle internodes, these in turn produce short branches from the subapical internode. **Leaves** 4-10 throughout the main stem, 1-5 on the short flowering branches; sheaths tubular, laterally compressed, verrucose; blade elliptic-lanceolate, apex unequally bilobed, dorsally carinate, subcoriaceous, rugose, margin entire, those of the main stem nearly twice the size of those on the branches. **Inflorescence** apical from the mature main stem and the secondary branches, racemose, distichous, arching, nutant; peduncle smooth, very short, with a single bract similar to the floral bracts, rachis zigzag, laterally compressed, lax. **Floral bracts** as long or longer than the ovary, deltoid, ovate, obtuse, conduplicate. **Flowers** 3-10, distichous, the lip always oriented towards the rachis, simultaneous, yellowish green, turning brown with age, fragrance during daytime, slight, metallic. **Ovary** inflated, terete, smooth. **Sepals** partly spreading, glabrous, lanceolate, acute, with an apical dorsal keel, margin spreading, entire; the dorsal sepal 6-veined, the lateral veins bifurcate, lateral sepals falcate, 7-veined, with two secondary veins and thus appearing 9-veined. **Petals** spreading, linear-lanceolate, acute, somewhat falcate, 3-veined, margin spreading, entire. **Lip** united to the column, entire, triangular, acuminate, the basal corners rounded; tricallose, the mid keel prolonged beyond the middle of the lip. **Column** straight, thick. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, semiobovoid, laterally compressed, subequal, caudicles soft and granulose, similar in length to the pollinia; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** deep, penetrating more than half the ovary, inflated, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from the Cordillera Central in Costa Rica to Chiriquí in western Panama. Epiphyte in cloud forest, along the crest of the cordillera, from 2300 to 2800 m altitude. Flowering from March to October.

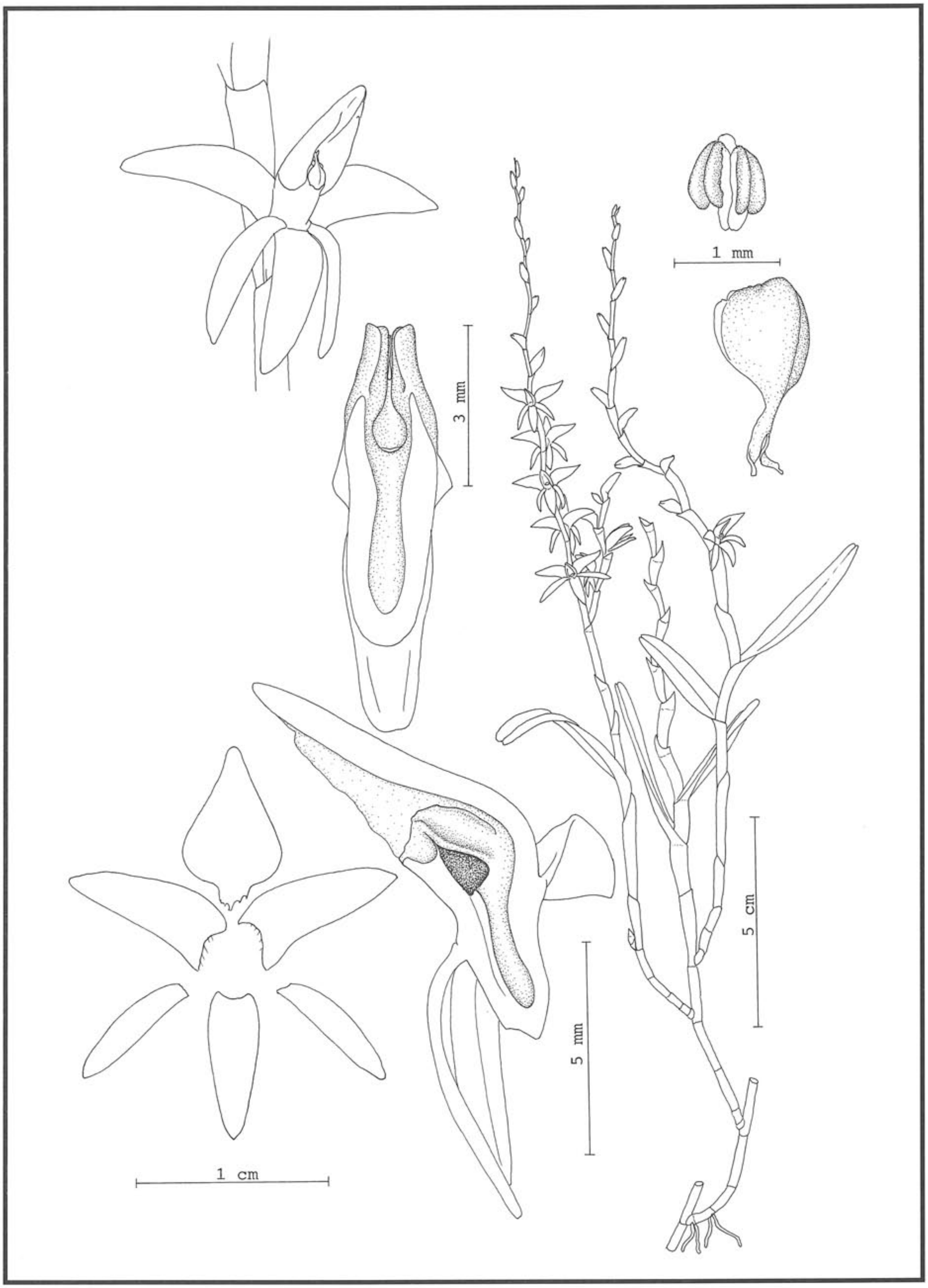
RECOGNITION: *Epidendrum anoglossoides* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has a branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by its laterally compressed stems, arching, nutant inflorescence, laterally compressed rachis, floral bracts deltoid, compressed, conduplicate, 3-10 simultaneous, greenish-yellow flowers, sepals lanceolate, petals linear-lanceolate, acute, triangular lip with acuminate apex and the basal corners rounded. *Epidendrum elcimeyae* Hágsater & García-Cruz has a filiform rachis, 2-3 flowers, sepals and petals 6-7 mm long, and an acute, triangular-cordiform lip. It is florally very similar to *Epidendrum anoglossum* Schltr. but that species belongs to the Neowilliamsia Group and can be recognized by rhizomatous plants, simple stems, linear apical leaves, the floral bracts shorter than the ovary, and the lanceolate, acute lip.



CONSERVATION STATUS: DD. (Data deficient).

ETYMOLOGY: The epithet refers to the similarity of the flowers to those of *Epidendrum anoglossum* Schltr.

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EPIDENDRUM ANOGLOSSUM Schltr.

Plate 908

EPIDENDRUM ANOGLOSSUM Schltr., Repert. Spec. Nov. Regni Veg. 9: 214. 1911.

Type: COSTA RICA: [San José:] In den Wäldern von [El] General*, c. 600 m, Januar 1891, ***Henri Pittier 3524***. Holotype: B, destroyed, tracing of the illustration of the type, AMES 26031! Isotype: BR! (sterile.)

Hierba epífita, simpodial, algo escandente, 8-25 cm de alto. **Raíces** producidas en los entrenudos basales de cada tallo, filiformes, blancas, 0.3-0.6 mm de grosor. **Tallos** sencillos, producidos de los entrenudos inferiores de tallos anteriores, tipo caña, teretes en la base y lateralmente aplanados en el ápice, ancipitosos, delgados, erectos, rectos a ligeramente flexuosos, 4-13 x 0.1-0.35 cm; cubiertos en la base hasta por 5 vainas no foliáceas, tubulares, algo infladas en el ápice sin llegar a ser infundibuliformes, 5-20 mm de largo. **Hojas** 2-6, distribuidas en la mitad apical de los tallos, alternas, articuladas, erecto extendidas; vaina tubular, ligeramente infundibuliforme, ancipitosa, 4-20 x 1.8-6 mm; lámina linear lanceolada, obtusa, bilobada, con una quilla dorsal diminuta, coriácea, margen entero, 1.2-5.1 x 0.2-0.6 [0.8] cm; con una lígula muy evidente del lado opuesto de la lámina, triangular, subaguda, 0.5-0.6 mm de largo. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, laxa, erecta, 4-17 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, recto, corto, 4-17 mm de largo; raquis lateralmente aplanado, ancipitoso, recto a ligeramente flexuoso. **Brácteas florales** de la mitad del largo del ovario, deltoides, agudas, conduplicadas, ancipitosas, amplexicaules, 2-4 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 5-7 mm de largo. **Flores** 5-14, simultáneas, no resupinadas, dísticas, el labelo orientado hacia la raquis, de color amarillo verdoso; sin fragancia. **Sépalos** extendidos, libres, ovado lanceolados, subagudos, 5-nervados, margen entero, 6-8.5 [10] x 2-3.5 [4] mm; los **laterales** falcados, oblicuos. **Pétalos** extendidos, libres, linear lanceolados, subagudos, 3-nervados, oblicuos, margen entero, 5.5-8.5 [10] x 1.0-1.6 mm. **Labelo** unido a la columna, entero, conduplicado, triangular rómbico, acuminado, margen entero, 6-8 [10] x 5-6 [8] mm; ecalloso y sin quillas. **Columna** recta, gruesa, corta, el ápice ampliamente redondeado, 3-4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular, ovoide, con una quilla dorsal prominente y carnosa en la superficie dorsal, el ápice con un par de apéndices lineares, elongados. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas 2, laminares, duras, algo más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** profundo, penetrando más de la mitad del ovario, amplio, no ornamentado. **Cápsula** angostamente elipsoide; pedicelo 5-7 mm de largo; cuerpo 14 x 6 mm; cuello apical muy corto, con el perianto persistente.

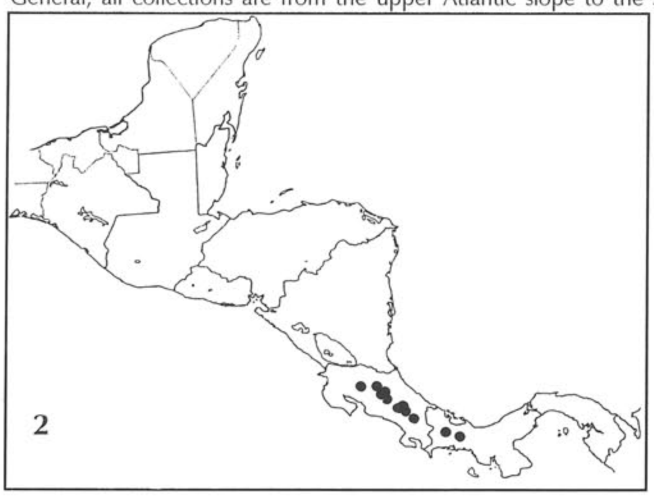
Epiphytic, sympodial, somewhat scandent **herb. Roots** produced from the basal internodes of the stems, filiform, white. **Stems** simple, produced from the lower internodes of the previous stem, cane-like, terete at the base, laterally compressed above, ancipitose, thin, erect, straight to somewhat flexuous; the base covered by up to 5 non-foliaceous, tubular sheaths, somewhat inflated towards the apex without being infundibuliform. **Leaves** 2-6, distributed along the apical half of the stem, alternate, articulate, erect-spreading; sheath tubular, slightly infundibuliform, ancipitose; blade linear-lanceolate, obtuse, bilobed, with a minute dorsal keel, coriaceous, margin entire; with an evident ligule opposite to the blade, triangular, subacute. **Inflorescence** apical, flowering only once, racemose, distichous, lax-flowered, erect; peduncle laterally compressed, ancipitose, straight, short; rachis laterally compressed, ancipitose, straight to somewhat flexuous. **Floral bracts** half as long as the ovary, deltoid, acute, conduplicate, ancipitose. **Ovary** terete, thin, not inflated, smooth. **Flowers** 5-14, simultaneous, non-resupinate, distichous, the lip facing the rachis, greenish yellow, not fragrant. **Sepals** spreading, free, ovate-lanceolate, subacute, 5-veined, margin entire; the lateral sepals falcate, oblique. **Petals** spreading, free, linear-lanceolate, subacute, 3-veined, oblique, margin entire. **Lip** united to the column, entire, conduplicate, triangular-rhombic, acuminate, margin entire; ecallose, without keels. **Column** straight, thick, short, the apex widely rounded. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, obovoid, with a prominent, fleshy dorsal keel, and a pair of elongate linear appendices at the apex. **Rostellum** apical, slit. **Nectary** deep, penetrating more than half the ovary, wide, smooth. **Capsule** narrowly ellipsoid, with a thin pedicel and a very short apical neck, perianth persistent.

OTHER SPECIMENS & RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Distributed along the crest of the cordillera from western Costa Rica and western Panama, epiphytic from 1000 to 3200 m altitude. Flowering from May to January.

RECOGNITION: *Epidendrum anoglossum* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, usually non-resupinate flowers, the lip often digitate and the 2-4 pollinia with 2 hard, laminar, caudicles. The species is recognized by the short plants (to 25 cm high), with 2-6 linear-lanceolate leaves, an erect, racemose inflorescence, greenish yellow, distichous, non-resupinate flowers, the triangular-rhombic lip with the sides upturned, the ovoid anther with a pair of apical, linear, elongate appendices, and 4 pollinia. It is vegetatively very similar to *Epidendrum cymbiglossum* Hágsater, but that species has 2 apical, oblong-elliptic leaves, and larger, yellow flowers (sepals 14.5-17.5 mm long). *Epidendrum nervosiflorum* Ames & C.Schweinf. is smaller overall (sepals 2.5-4.0 mm long) with green flowers with a white, bicallose lip, and 2 pollinia.

***NOTE:** The locality is suspicious, as we have no record of other collections from the bottom of the valle of San Isidro del General, all collections are from the upper Atlantic slope to the summit of the cordillera. The specimen may have been collected along the way to El General, on the summit of the Cordillera de Talamanca. The species is easily recognized, however, from the sterile isotype at BR, and the tracing of the type at AMES.



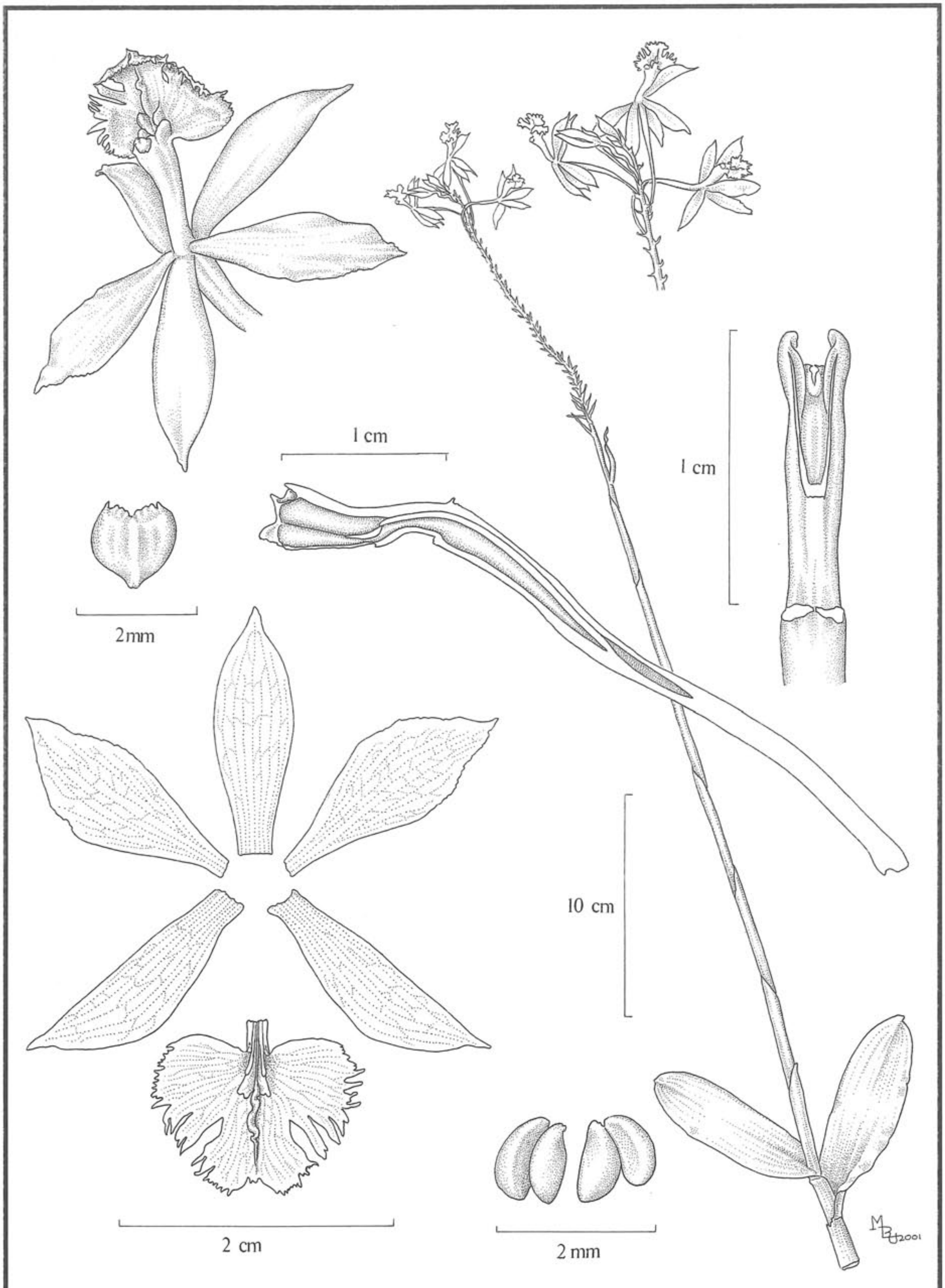
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CONSERVATION STATUS: Not threatened. Widespread and common in its range.

ETYMOLOGY: From the Greek α, without, and γλωσσα, tongue, possibly in reference to the unpretending lip.

REFERENCES: Atwood, J. T. 1989, ***Epidendrum anoglossum* Schltr.**, Icon. Pl. Trop. pl. 1316. Dressler, R. L., 1981, **El género Neowilliamsia** Garay, Orquídea (Méx.) 8(1): 27-36. Dressler, R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 84. Hágsater, E., J. García Cruz, & L. Sánchez Saldaña, 2003, *Epidendrum* in Hammel et al., **Manual de Plantas de Costa Rica**, Missouri Botanical Garden, 3: 116. Hágsater, E., 2005. *Epidendrum* in F., Pupulin, **Vanishing Beauty: Native Costa Rican Orchids, 1**: 269, 286; San José C.R., Editorial de la Universidad de Costa Rica.

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EPIDENDRUM APATOTYLOSUM Hágsater

Plate 909

EPIDENDRUM APATOTYLOSUM Hágsater, *sp. nov.*

Type: COSTA RICA: [Cartago: Chirripó:] Vertiente Atlántica, cerca de [Hacienda] Grano de Oro, 800 m, 15 March 1983, ***Clarence Kl. Horich sub E. Hágsater 7117.*** Holotype: INB! Isotypes: AMES! MO! AMO 3565! (Illustration voucher)

Epidendro baumanniano Schltr. simile sed floribus non resupinatus rubru-purpureis, callo luteo et columnae parte distali alba, duas appendices carnosas rotundatas formanti aspectu callorum additionorum paris.

Hierba epífita, mirmecofila, simpodial, cespitosa, hasta de 150 cm de alto. **Raíces** basales, delgadas. **Tallos** sencillos, tipo caña, teretes, delgados, rectos, 0.7-1 cm de grosor. **Hojas** numerosas, distribuidas en la mitad apical del tallo, alternas, articuladas; vaina tubular, finamente estriada, 2-3 x 0.7-1 cm; lámina oblongo elíptica, ápice redondeado, levemente bilobado, coriácea, margen extendido, el ápice ligeramente ondulado, 9-12 x 2.2-3.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, (produciendo un racimo adicional cerca del ápice del pedúnculo cuando el racimo inicial ha dejado de florescer), elongada, pluriflora, densa, 42-50 cm de largo; pedúnculo (de la inflorescencia inicial) alargado, terete, recto, 37-50 cm de largo, cubierto casi en su totalidad por 7 brácteas tubulares, agudas, finamente estriadas, escariosas, 4.5-7.5 cm de largo, el ápice del mismo con una bráctea triangular lanceolada, acuminada, abrazadora, semejante a las florales pero mucho más grande, 2.3-3 cm de largo; el pedúnculo del racimo adicional, muy corto, 4.5-8 cm de largo; con 2 brácteas tubulares, agudas, cortas, escariosas, 8-11 mm de largo; raquis terete, delgado, recto, 7.5-14 cm de largo. **Flores** 40-85 por racimo, sucesivas, no resupinadas, color rojo amoratado; sin fragancia. **Brácteas florales** mucho más cortas que el ovario, triangular lanceoladas, acuminadas, abrazadoras, 2-15 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 20-35 mm de largo. **Sépalos** extendidos, libres, subagudos, diminutamente apiculados, 7-nervados, margen entero, extendido, 17-19 x 5.3-5.7 mm; el **dorsal** angostamente obovado, los **laterales** angostamente elípticos, muy oblicuos. **Pétalos** extendidos, libres, obovados, agudos, 3-nervados, las nervaduras laterales muy ramificadas en los 2/3 apicales, margen diminutamente dentado en la mitad apical, extendido, 18 x 7 mm. **Labelo** unido a la columna, trilobado, base ligeramente cordada, margen irregularmente dentado fimbriado, 11 x 15.5 mm; bicalloso, los callos prominentes, laminares, bilobados; disco provisto de una quilla intercallosa, láminar, delgada, alta, algo flexuosa, que se desvanece antes de llegar al seno apical; lóbulos laterales oblicuamente ovados, 7 x 9 mm; lóbulo medio subcuadrado, ápice con un seno profundo, bilobado, cada lóbulo oblicuamente subcuadrado, 5.7 x 9 mm. **Columna** delgada, la mitad apical ligeramente dirigida hacia arriba, ápice con un par de dientes laterales redondeados, prominentes, carnosos, asemejando un par adicional de callos, 10 mm de largo. **Clinandrio** reducido, con el margen entero. **Antera** ovoide, diminutamente apiculada, con el margen basal crenado, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas no vistas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, delgado, no inflado, liso. **Cápsula** no vista.

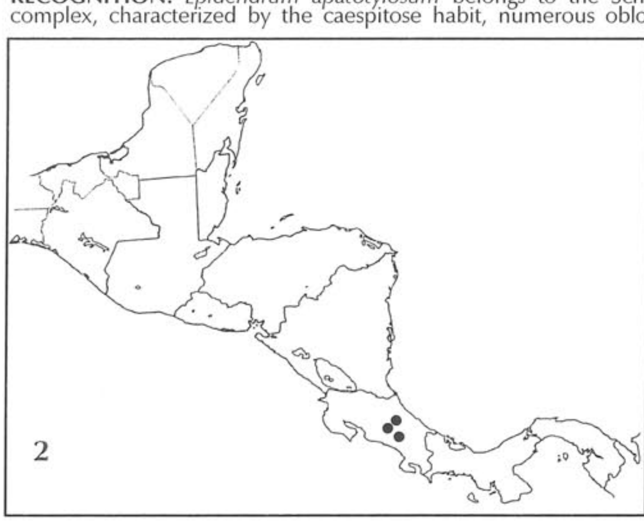
Epiphytic, myrmecophylous, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, terete, thin, straight. **Leaves** numerous, distributed along the apical half of the stems, alternate, articulate; sheath tubular, minutely striated; blade oblong-elliptic, apex rounded, somewhat bilobed, coriaceous, margin spreading, the apex somewhat undulate. **Inflorescence** apical, racemose (producing additional racemes near the apex of the peduncle, after the initial raceme has finished flowering), elongate, densely many-flowered; peduncle (of the initial raceme) elongate, terete, straight, nearly totally covered by 7 tubular, acute bracts, minutely striated, scarious, with a triangular-lanceolate, acuminate, bract at the apex, similar to the floral bracts but larger; peduncle of the second raceme very short, with 2 tubular, acute, short, scarious bracts; rachis terete, thin, straight. **Flowers** 40-85 per raceme, successive, non-resupinate, purple-red. **Floral bracts** much shorter than the ovary, triangular-lanceolate, acuminate. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, subacute, minutely apiculate, 7-veined, margin entire, spreading; the dorsal sepals narrowly obovate, the lateral sepals narrowly elliptic, very oblique. **Petals** spreading, free, obovate, acute, 3-veined, the lateral veins much branched along the apical 2/3, margin minutely dentate along the apical half, spreading. **Lip** united to the column, 3-lobed, the base slightly cordate, margin irregularly dentate-fimbriate; bicallose, the callus prominent, laminar, bilobed; disc provided with a laminar, thin, high keel, somewhat flexuous, disappearing before the apical sinus; lateral lobes obliquely ovate; midlobe subquadrate, apex with a deep sinus, bilobed, each lobe obliquely subquadrate. **Column** thin, the apical half slightly turned upwards, the apex with a pair of lateral, rounded, fleshy, prominent teeth which look like an additional pair of calli. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, minutely apiculate, the basal margin crenate, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, thin, not inflated, smooth.

OTHER SPECIMENS: COSTA RICA: Cartago: Planta cultivada, se presume que es de Turrialba, 1 VIII 1991, *Gin Lun s.n.*, USJ x2! cult. por Matero en Pacuarito de Turrialba, III 1989, *Matero s.n.*, USJ 38232! Ibid. USJ 38233!

OTHER RECORDS: COSTA RICA: Cartago: Entre Tuis y Cien Manzanas, 800 m, 20 XII 1982, *Horich sub Hágsater 6964*, Notes Hágsater, AMO! Puerto Rico, cult. en Tibás, 19 IV 1968, *L. Rodríguez 611*, watercolor, xerox AMO! San Isidro?, 15 III 1983, *Fournier sub Hágsater s.n.*, color slide, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the basin of the Río Reventazón in the province of Cartago, at around 800 m altitude, epiphytic, myrmecophylous. Flowering in March-April, August. No precise locality given.

RECOGNITION: *Epidendrum apatotylosum* belongs to the Schistochilum Group, Calanthum subgroup and Flexuosum complex, characterized by the caespitose habit, numerous oblong, coriaceous leaves, usually elongate peduncle of the inflorescence with a raceme of nonresupinate flowers, bicallose lip and granular caudicles of the pollinia. The species is recognized by the wide, elliptic-oblong leaves, the non-resupinate, purple-red flowers with the bilobed callus yellow and the prominent appendages of the column ivory white turning red when the flowers fade, the petals obovate, acute, wider than the sepals, and the lip 3-lobed, the midlobe separated from the lateral lobes by deep, narrow slits. It has been confused with *E. baumannianum* Schltr. (syn. *E. hawkesii* A.H.Heller) which has resupinate, vermillion, orange-red-colored flowers, the column and base of the lip often yellow, especially in Colombia, and a blunt column, without the calli-like appendages, the two calli of the lip large, semioblong, falcate.



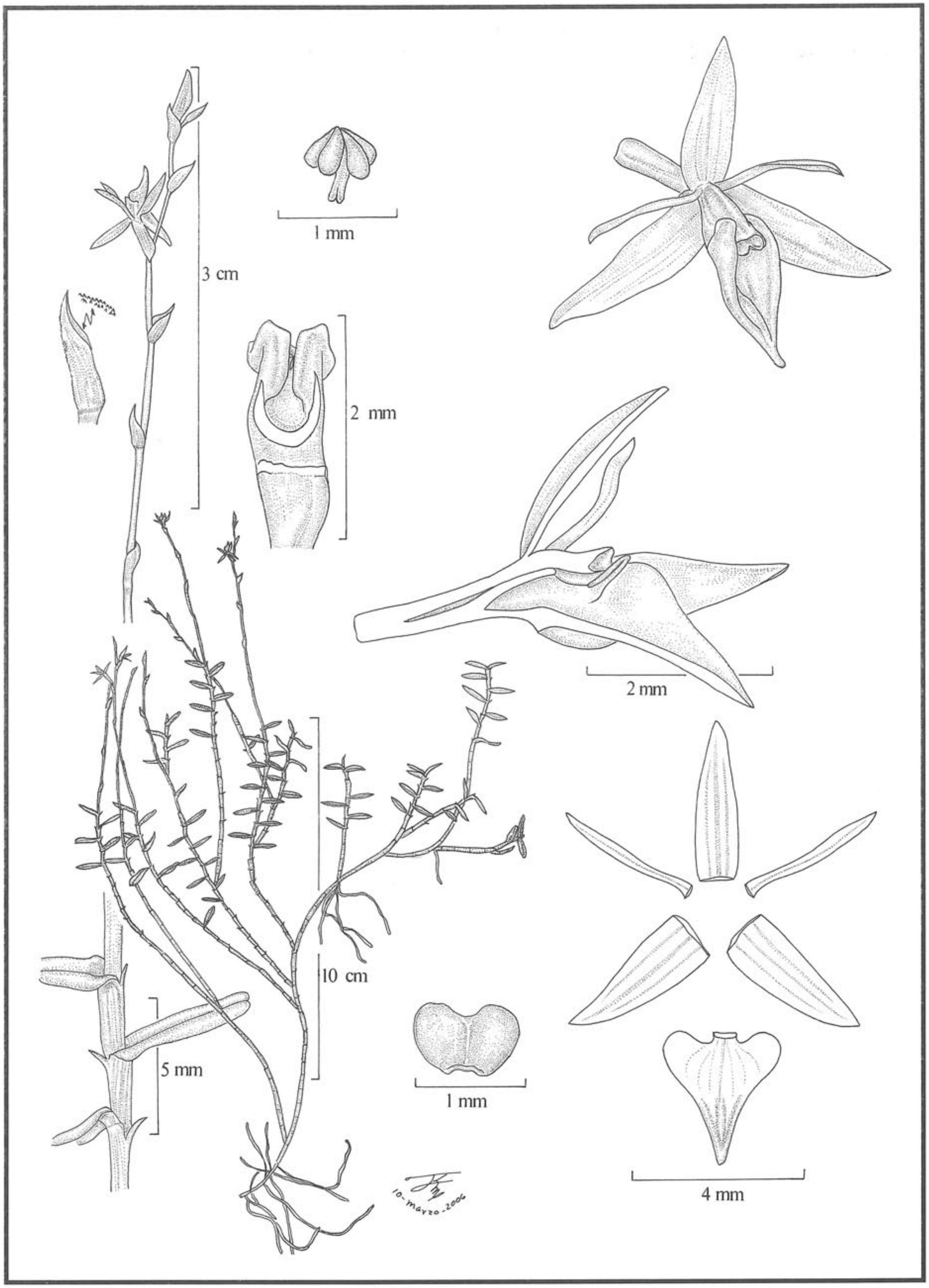
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek απατω, fake, and τυλος, callus, in reference to the ivory-white, callus-like appendages of the column, which look like an extra pair of calli.

REFERENCES: Mora, D. E. & J. T. Atwood, 1993. *Epidendrum baumannianum x E. imatophyllum*, in J. T. Atwood, *ed.*, Icon. Pl. Trop. 16: pl. 1521.

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EPIDENDRUM ASTROSELAGINELLA Hágsater & E.Santiago **Plate 910**

EPIDENDRUM ASTROSELAGINELLA Hágsater *et* E.Santiago, *sp. nov.*

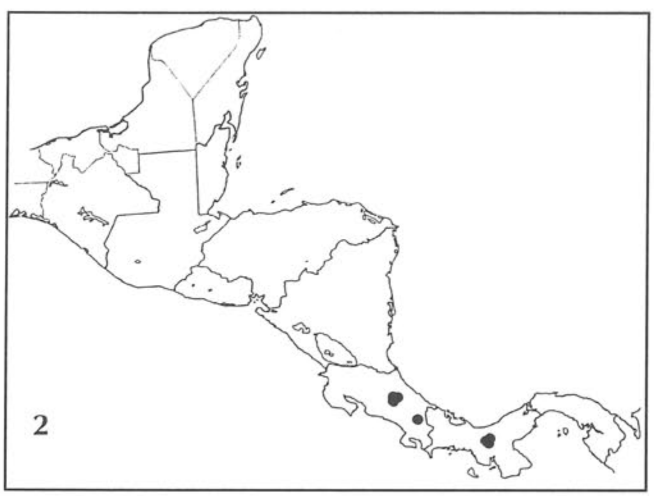
Type: COSTA RICA: Limón: remontando la cuenca del Río Urén, saliendo de la casa de Calixto Kiamble, hasta la finca de Valerio Morales, 1030 m, 25 Octubre 1985, ***Luis D. Gómez, Gerardo Herrera, D. Masterson 23814.*** Holotype: MO! (Illustration voucher.) Isotype: CR!

Epidendro selaginella Schltr. simile sed foliis lineari-lanceolatis, segmentis floralibus patentibus, floribus laxe in inflorescentiam distributis, ovario sepalisque glabris, columna duos dentes laterales erectos ad angulum 45° a fronte antherarum ferenti.

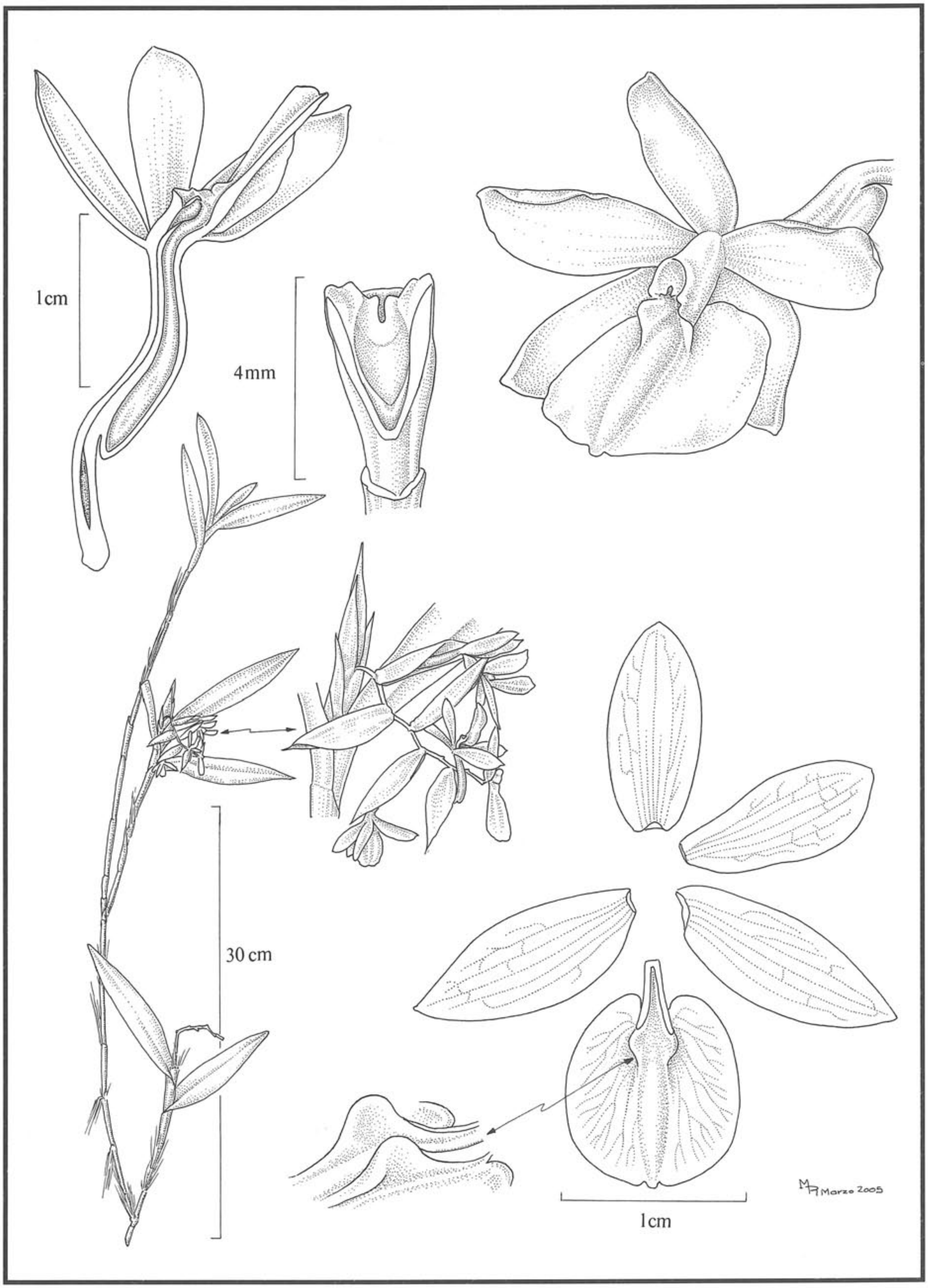
Hierba epífita, simpodial, cespitosa, 6.5-14 cm de alto. **Raíces** originándose en la base de cada tallo, muy delgadas, carnosas, blancas, 0.1-0.3 mm de grosor. **Tallos** sencillos, producidos del 2-3 entrenudo del tallo anterior, tipo caña, teretes en la base, lateralmente aplanados arriba, delgados, erectos, rectos, 4-12.5 x 0.03-0.08 cm. **Hojas** 9-15, distribuidas a todo lo largo del tallo, dísticas, alternas, articuladas, equidistantes, horizontales; vainas tubulares, algo infladas en el ápice, sin llegar a ser infundibuliformes, algo lateralmente aplanadas, finamente estriadas, 1.5-3.5 x 0.4-1 mm; con una lígula muy evidente del lado opuesto de la lámina, triangular, subaguda, conduplicada, 0.6-0.7 mm de largo; lámina linear lanceolada, obtusa, desigualmente bilobada, con una quilla dorsal baja, coriácea, amplexicaule, margen entero, extendido a ligeramente revoluto, 3.6-10.5 x 0.6-1.9 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, erecta, 1.5-6 cm de largo; pedúnculo corto, filiforme, recto, 10-32 mm de largo; ocasionalmente provisto de 1 a 2 brácteas, tubulares en la base, agudas en el ápice, 3-4 mm de largo; raquis recto, con las flores laxamente distribuidas. **Brácteas florales** más cortas a ligeramente más largas que el ovario, angostamente ovadas, agudas, conduplicadas, amplexicaules, ligeramente papilosas, 2.6-3.2 mm de largo. **Ovario** corto, terete, delgado, no inflado, no ornamentado, 2.6-3 mm de largo. **Flores** 2-7, simultáneas, no resupinadas, dísticas, verde pálido o amarillo verdoso, antera blanca; sin datos de fragancia. **Sépalos** extendidos, libres, angostamente triangulares, agudos, con una quilla dorsal baja, glabros, 3-nervados, margen extendido, entero, 3.5-4.2 x 1-1.2 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, lineares, agudos, glabros, 1-nervados, margen extendido, entero, 3.3-3.6 x 0.2-0.3 mm. **Labelo** unido a la mitad basal de la columna, entero, triangular, cordado, ligeramente más largo que ancho, algo cóncavo en la base, agudo y carnoso en el ápice, abrazando a la columna en posición natural sin envolverla por completo, 3 x 2.5 mm; ecalloso, con una quilla carnosa muy baja en el ápice. **Columna** corta, recta, gruesa, el ápice con un par de dientes laterales prominentes y planos, dirigidos hacia arriba a un ángulo de 45°, frente a la antera, 1.5 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas granulosas, del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando ¼ del ovario, agudo en la base y gradualmente más amplio hacia el ápice, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** originating from the base of the stems, very thin, fleshy, white. **Stems** simple, produced from the 2-3rd internode of the previous stem, cane-like, terete at the base, laterally compressed above, thin, erect, straight. **Leaves** 9-15, evenly distributed throughout the stem, distichous, alternate, articulate, spreading horizontally; sheaths tubular, somewhat inflated towards the apex, without being infundibuliform, somewhat laterally flattened, minutely striated, with an evident ligule opposite the blade, triangular, subacute, conduplicate; blade linear-lanceolate, obtuse, unequally bilobed, with a low dorsal keel, coriaceous, amplexicaul, margin entire, spreading to slightly revolute. **Inflorescence** apical, flowering only once, racemose, distichous, secund, erect; peduncle short, filiform, straight, occasionally provided with 1-2, tubular, acute bracts; rachis straight, with lax distributed flowers. **Floral bracts** shorter to slightly shorter than the ovary, narrowly ovate, acute, conduplicate, amplexicaule, slightly papillose. **Ovary** short, terete, thin, not inflated, smooth. **Flowers** 2-7, simultaneous, non-resupinate, distichous, pale green or greenish yellow, anther white. **Sepals** spreading, free, narrowly triangular, acute, with a low dorsal keel, glabrous, 3-veined, margin spreading, entire, the lateral sepals oblique. **Petals** spreading, free, linear, acute, glabrous, 1-veined, margin spreading, entire. **Lip** united to the basal half of the column, entire, triangular, base cordate, slightly longer than wide, somewhat concave a the base, acute and fleshy at the apex, embracing the column in natural position without covering it completely; ecallose, with a low, fleshy keel at the apex. **Column** short, straight, thick, the apex with a pair of prominent lateral, flat teeth directed upwards at a 45º angle in front of the anther. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles granulose, twice as long as the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/4th of the ovary, acute at the base, gradually wider towards the apex, not inflated, smooth.

OTHER SPECIMENS: See appendix.
DISTRIBUTION AND ECOLOGY: Ranging along the Atlantic slope of the northern Cordillera de Talamanca from central Costa Rica and on the Serranía de Tabasará in Veraguas in central Panama, at 500-1000 m altitude, epiphytic. Flowering from August to November.
RECOGNITION: *Epidendrum astroselaginella* belongs to the Epidanthus Group which is characterized by short, small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the linear-lanceolate leaves, flowers laxly distributed on the inflorescence, the floral segments spreading, star-shaped, very thin petals, the nectary gradually widening towards the apex, not constricted at the perianth, the ovary and sepals glabrous, and the pair of prominent lateral, flat, teeth of the column directed upwards at a 45º angle in front of the anther. *Epidendrum selaginella* has ovate to oblong-ovate leaves, the flowers aggregate at the end of a long inflorescence, the floral segments partly spreading, the sepals and ovary densely papillose, and the nectary constricted at the perianth. *Epidendrum stenosellaginella* Hágsater & E.Santiago is vegetatively very similar, with narrow leaves, but has smaller flowers (sepals 2.3-3.0 mm long), the floral segments partly spreading, and the lip as wide as it is long, and the blunt, toothless column totally united to the lip.



CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: From the Greek, αστρον, star, and *selaginella*, in reference to the open spreading, star-shaped tepals which distinguish this species from the true *E. selaginella*, and the sister species, *E. stenoselaginella*.



EPIDENDRUM BARBAE Rchb.f.

Plate 911

EPIDENDRUM BARBAE Rchb.f., Beitr. Orch. Centr. Amer. p. 83. 1866.

Type: COSTA RICA: Vulcan de Barba, 10,000 ft [3000 m], 11 July 1857, ***Wendland 1046.*** Holotype: W-R 4180! (Tracing at AMES!).

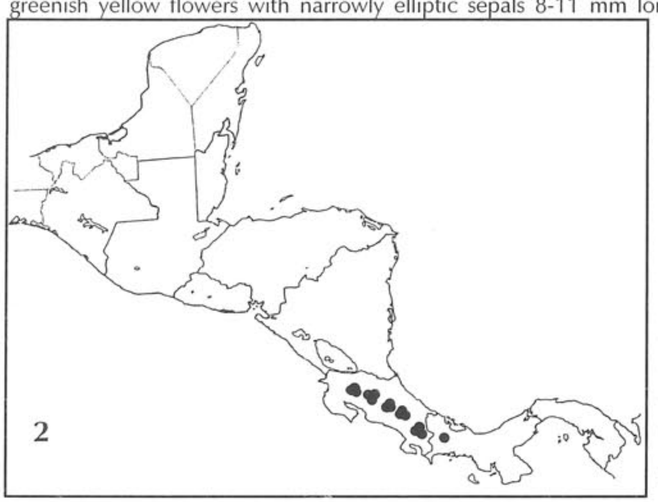
Synonym: *Epidendrum puteum* Standley & L.O.Williams, Ceiba 3: 191. 1954.
Type: COSTA RICA: flowered at Las Cóncavas, originally from La Hondura, 22 September 1952, ***John M. H. Lankester 1606.*** Holotype: US! Specimen with illustration of flower. (Photo of type: AMES! F! UC!) (Copy of illustration AMES! SEL!)

Hierba epífita o raramente terrestre, suberecta, simpodial, rastrera, de crecimiento sucesivo lateral; 25-60 cm de alto. **Raíces** en la base del tallo, escasas, delgadas, blancas; 0.8-1.1 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos; 6-38 x 0.3-0.6 cm; cubiertos por vainas tubulares, agudas, escariosas, fibrosas con el tiempo; 22-47 mm de largo. **Hojas** 2-7, agrupadas en el ápice de los tallos, alternas, articuladas, desiguales, la basal más pequeña; vainas tubulares, finamente estriadas; 8-33 mm de largo; lámina elíptico lanceolada, aguda, desigualmente bilobada, coriácea, margen entero; las de los tallos inferiores 6.5-11 x 0.8-2.2 cm; las de los tallos superiores 2.5-6 x 0.5-2.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, arqueada; 3-6.5 cm de largo; pedúnculo corto, oculto en su totalidad por 1-3 brácteas semejantes a las florales, ovadas, agudas, conduplicadas, imbricadas, glumáceas; 18-23 x 5-6 mm; raquis terete, delgado, en zigzag, sin quedar oculto por las brácteas florales. **Brácteas florales** más largas que el ovario, las apicales progresivamente más cortas, ovadas, agudas, conduplicadas, amarillas, teñidas de naranja en el ápice; 10-27 x 4-10 mm. **Flores** 6-12, simultáneas, resupinadas, amarillas a amarillo verdosas ocasionalmente con el labelo y la columna blancos; sin datos de fragancia. **Ovario** recto, terete, delgado, liso, inflado ventralmente en los 2/3 apicales, formando una vesícula prominente en forma de espolón la cual esta separada del ovario en su mitad basal; 15-23 mm de largo. **Sépalos** entreabiertos, libres, glabros, membranáceos, angostamente elípticos, subagudos, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido, entero; 8-11 x 4-5.5 mm. **Pétalos** entreabiertos, libres, membranáceos, obovados, base cuneada, redondeados a subagudos, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido, entero; 9-11 x 4-5 mm. **Labelo** unido a la columna, entero, suborbicular obovado, cordado en la base, ápice ligeramente emarginado con un apículo en el seno, margen lateral ligeramente revoluto; 6-10 x 7-9 mm; bicalloso, los callos laminares, cortos e incipientes; con 3 quillas delgadas, bajas, lisas, la central desvaneciéndose hacia el ápice de la lámina. **Columna** recta, corta, gruesa, 4 mm de largo. **Clinandrio** corto, margen eroso. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides; caudículas suaves y granulosas ligeramente más largas que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** profundo, penetrando 2/3 partes del ovario, formando una vesícula. **Cápsula** no vista.
Epiphytic or rarely terrestrial, suberect **herb**, with lateral successive growths. **Roots** from the stem, scarce, thin. **Stem** simple, cane-like, terete, thin, straight; covered by acute, scarious, tubular sheaths, becoming fibrous with time. **Leaves** 2-7, aggregate towards the apex of the stems, alternate, articulate, unequal, the basal leaf smaller; sheaths tubular, minutely striated; blade, elliptic-lanceolate, acute, unequally bilobed, coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, arching; peduncle short, totally hidden by 1-3 bracts similar to the floral bracts; rachis terete, thin, zigzag, not hidden by the floral bracts. **Floral bracts** longer than the ovaries, the apical ones progressively shorter, ovate, acute, conduplicate, yellow stained with orange at the apex. **Flowers** 6-12, simultaneous, resupinate, yellow to greenish yellow, occasionally the lip and column white. **Ovary** straight, terete, thin, smooth, inflated ventrally along the apical 2/3 and forming a prominent spur free on the basal half. **Sepals** partly spreading, free, glabrous, membranaceous, narrowly elliptic, subacute, 3-veined, the lateral veins branching from the base so as to appear 5-veined, margin spreading, entire. **Petals** partly spreading, free, membranaceous, obovate, base cuneate, apex rounded to subacute, 3-veined, the lateral veins branching from the base so as to appear 5-veined, margin spreading, entire. **Lip** united to the column, entire, suborbicular obovate, base cordate, apex slightly emarginate with an apicule in the sinus, lateral margin somewhat revolute; bicallose, the calli laminar, short, with 3 thin, low, smooth keels, the central keel vanishing towards the apex of the lip. **Column** straight, short, thick. **Clinandrium-hood** short, margin erose. **Anther** obovid, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, slightly longer than the pollinia; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** penetrating 2/3 of the ovary and forming a thickened vesicle.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Costa Rica and western Panama, along the summit of the continental divide, epiphytic or rarely terrestrial at [1300-1600] 2000-3200 m altitude. Flowering from March to November.

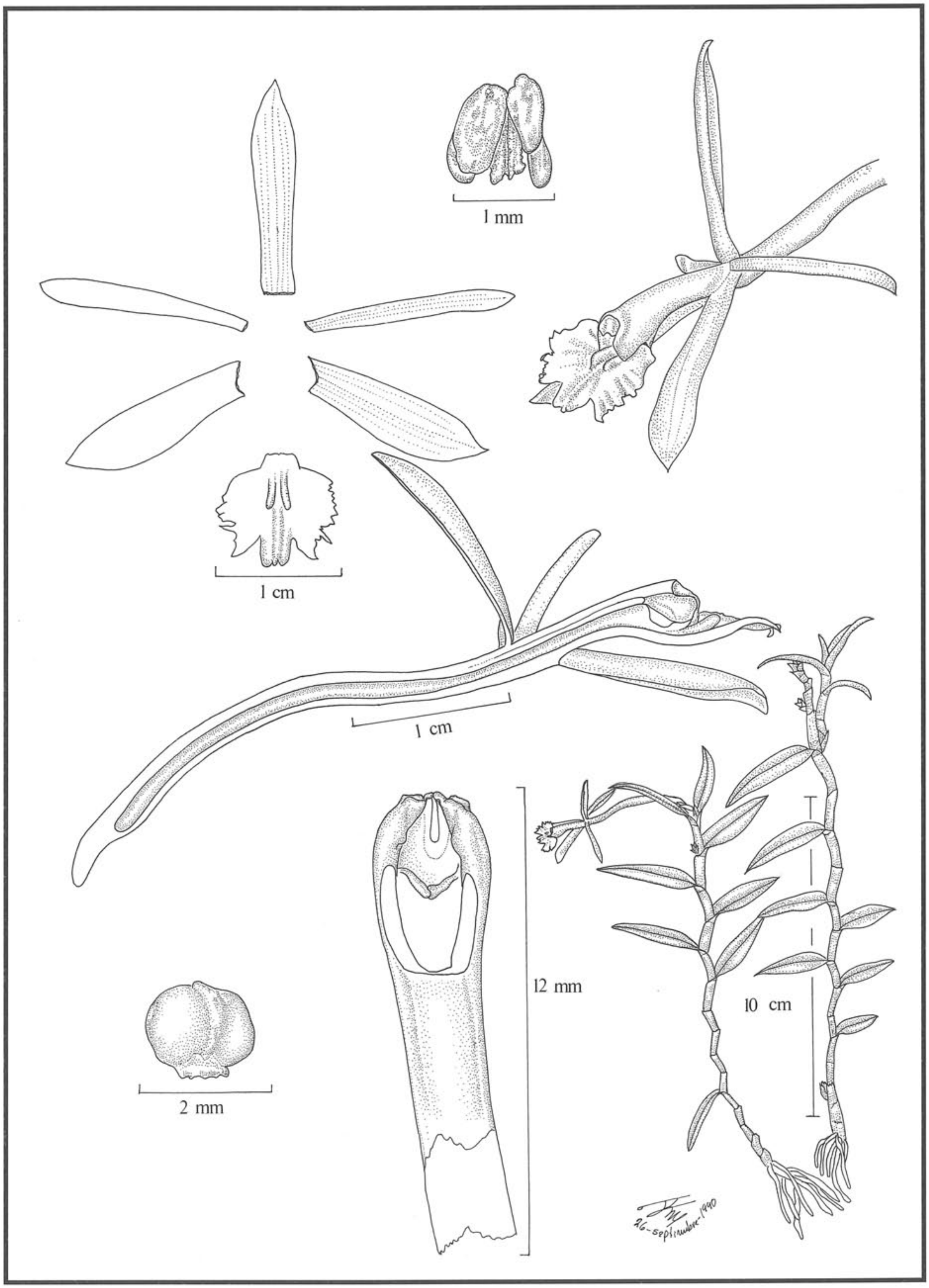
RECOGNITION: *Epidendrum barbae* belongs to the Polychlamys Group, Polychlamys Subgroup which is characterized by the successive lateral growths, few leaves aggregate towards the apex of the stems, the distichous, apical inflorescence with prominent, conduplicate, acute, glumaceous floral bracts. The species is distinguished by the inflorescence with yellow or greenish yellow flowers with narrowly elliptic sepals 8-11 mm long, obovate petals 4-5 mm wide, and the suborbicular obovate, bicallose lip with 3 keels; the nectary forms a prominent spur along the apical 2/3 of the ovary (free along the basal half). *Epidendrum bugabense* Hágsater has a few-flowered inflorescence with red flowers, the rachis straight and lateral sepals descending, 16-19 mm long, petals 8 mm wide; the lip suborbicular obovate; nectary forming a prominent vesicle along the apical 2/3 of the ovary. *Epidendrum lutheri* Hágsater has a lax inflorescence with green to chocolate-green flowers; descending sepals with the margin revolute and the lip oblong, much longer than wide, forming a prominent vesicle at the apical half. *Epidendrum polychlamys* Ames also has yellow yellow or yellowish green to rarely pink flowers with sepals [13]15-28 mm long, the ovary does not form a ventral vesicle, and the lip is widely oblong to obovoid.



CONSERVATION STATUS: DD. Data deficient. The species is apparently widespread and common.

ETYMOLOGY: In reference to the Volcán Barva, part of the Cordillera Central in Costa Rica, where the type was collected. The specific epithet *puteum* is derived from the Latin *puteus*, a hole or well in the ground, and probably refers to the prominent nectary which forms a spur.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM BATESII Dodson **Plate 912**

EPIDENDRUM BATESII Dodson, Icones Pl. Trop. 1: 73. 1980.

Type: ECUADOR: Pichincha: Centinela, 12 km E of Patricia Pilar off the road Santo Domingo to Quevedo, 600 m, 6 February 1979, ***C. H. Dodson & W. L. Bates 7367.*** Holotype: SEL! Isotypes: AAU! MO!

Hierba epífita, monopodial, ramificada, hasta de 21 cm de alto. **Raíces** basales, carnosas, delgadas, 0.4-0.8 mm de grosor. **Tallos** ramificados, tipo caña, teretes, flexuosos, delgados, 15 x 0.22-0.36 cm; las ramificaciones cortas, escasas, producidas de los entrenudos apicales del tallo principal. **Hojas** 9-15, distribuidas a lo largo de los tallos, subcoriáceas, alternas; vaina tubular, estriada y rugosa, 5-13 x 2.2-3.6 mm; lámina lisa, angostamente lanceolada, ápice agudo, mucronado, margen entero, 2.5-3.4 x 0.6-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, subsésil, 1.0 cm de largo; pedúnculo muy corto, terete, delgado, desprovisto de brácteas, 2 mm de largo; raquis oculto casi totalmente por las brácteas florales. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, abrazadoras, 2-4 mm de largo. **Flores** 3-4, sucesivas, esencialmente no resupinadas, una abierta a la vez, verdes con el labelo blanco; sin fragancia. **Ovario** terete, ligeramente inflado ventralmente a todo lo largo, liso, 3-4 cm de largo. **Sépalos** extendidos, libres, angostamente oblanceolados, agudos, 6-nervados, margen entero, algo revoluto, 15-17 x 3.8-4.5 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, linear oblanceolados, subagudos, 3-nervados, margen entero, 16-17 x 1.7-1.9 mm. **Labelo** unido a la columna, trilobado, truncado a ligeramente cordado en la base, 7.6-8 x 9.6-10 mm; bicalloso, los callos delgados; disco provisto de una carina, lisa, baja; lóbulos laterales oblicuamente semiovados, dolabriformes, anchos en el punto de unión con el disco del labelo, margen crenado a denticulado, 3.8 x 7.0 mm; lóbulo medio corto, cuadrado, truncado en el ápice, diminutamente apiculado, margen entero, 2.3-2.5 x 2.3-2.5 mm. **Columna** recta, delgada, obcónica en el ápice, 10-12 mm de largo. **Clinandrio** corto, margen entero. **Antera** subreniforme, con una quilla roma al frente, 4 locular. **Polinios** 4, obovoides, desiguales, caudículas algo granulosas, casi tan largas como los polinios; viscidio semilíquido, cristalino. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** penetrando un poco más de 4/5 del ovario, delgado, no inflado, liso. **Cápsula** no vista.

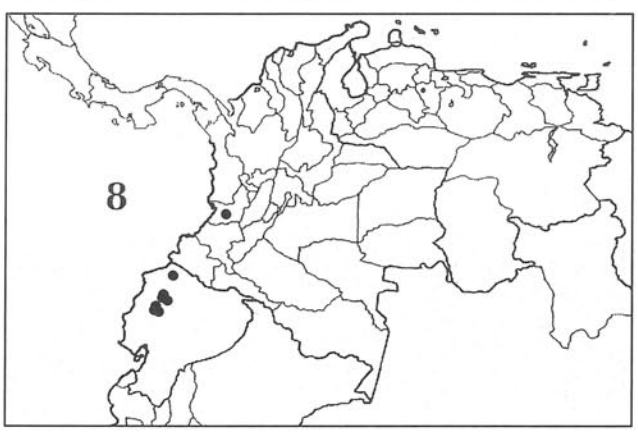
Epiphytic, monopodial, branching **herb. Roots** basal, fleshy, thin. **Stems** branching, cane-like, terete, flexuous, thin; branches short, scarce, produced from the upper internodes of the main stem. **Leaves** 9-15, distributed throughout the stems, subcoriaceous, alternate; sheath tubular, striated and rugose; blade narrowly lanceolate, acute, mucronate, smooth, margin entire. **Inflorescence** apical, racemose, subsessile; peduncle very short, terete, thin; rachis nearly totally hidden by the floral bracts. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 3-4, successive, essentially non-resupinate, one open at a time, green, the lip white; not fragrant. **Ovary** long, terete, slightly inflated ventrally throughout its length. **Sepals** spreading, free, narrowly oblanceolate, acute, 6-veined, margin entire, somewhat revolute, the lateral sepals oblique. **Petals** spreading, free, linear-oblanceolate, subacute, 3-veined, margin entire. **Lip** united to the column, 3-lobed, truncate to slightly cordate at the base; bicallose, the calli thin; disc provided with a low keel; lateral lobes obliquely semiovate, dolabriform, the union with the disc wide, margin crenate to denticulate; midlobe short, square, truncate, minutely apiculate, margin entire. **Column** straight, thin, apex obconical. **Clinandrium-hood** short, margin entire. **Anther** subreniform, with a low keel in front, 4-celled. **Pollinia** 4, obovoid, subequal; caudicles somewhat granulose, nearly as long as the pollinia. **Rostellum** apical, slit. **Nectary** penetrating somewhat more than 4/5 of the ovary, thin, smooth.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: km 52 Queremal to Anchicayá, 250 m, col. 27 IV 1983, pressed 27 VIII 1983, *Hágsater 7391,* AMO! (Illustration, AMO!) COL! **ECUADOR: Esmeraldas:** km 34.4 Lita to San Lorenzo, 250 m, 11 VII 1990, *Hágsater 10640,* AMO! (Illustration voucher). **Pichincha:** Centinela, km 44 of the road Sto. Domingo-Quevedo, 600 m, I 1979, *Besse 1230,* AAU! SEL! Centinela, km 12 Patricia Pilar to 24 Mayo, 600 m, 7 VII 1985, *Dodson 16208,* MO! QCA! QCNE! Santa Rosa de Toachi, 7 km highway from Sto. Domingo to Quevedo, 1000 m, 20 I 1990, *Hirtz 4526,* RPSC!

OTHER RECORDS: ECUADOR: Pichincha: Río Palenque, Centinela, Hort. RPSC, 600 m, 8 XII 1986, *Dodson 9047,* AMO (slide)! Los Bancos, Comunidad Nuevo Mundo, 800 m, 20 I 2003, *Tobar 434,* AMO (digital image of specimen)!

DISTRIBUTION AND ECOLOGY: Ranging from the coastal lowlands of the Pacific slope of the Andes from southern Colombia to central Ecuador, between 250 and 1000 m altitude. Flowering in December to July. This species seems to grow at somewhat lower altitudes than *E. oxybatesii* Hágsater & Dodson.

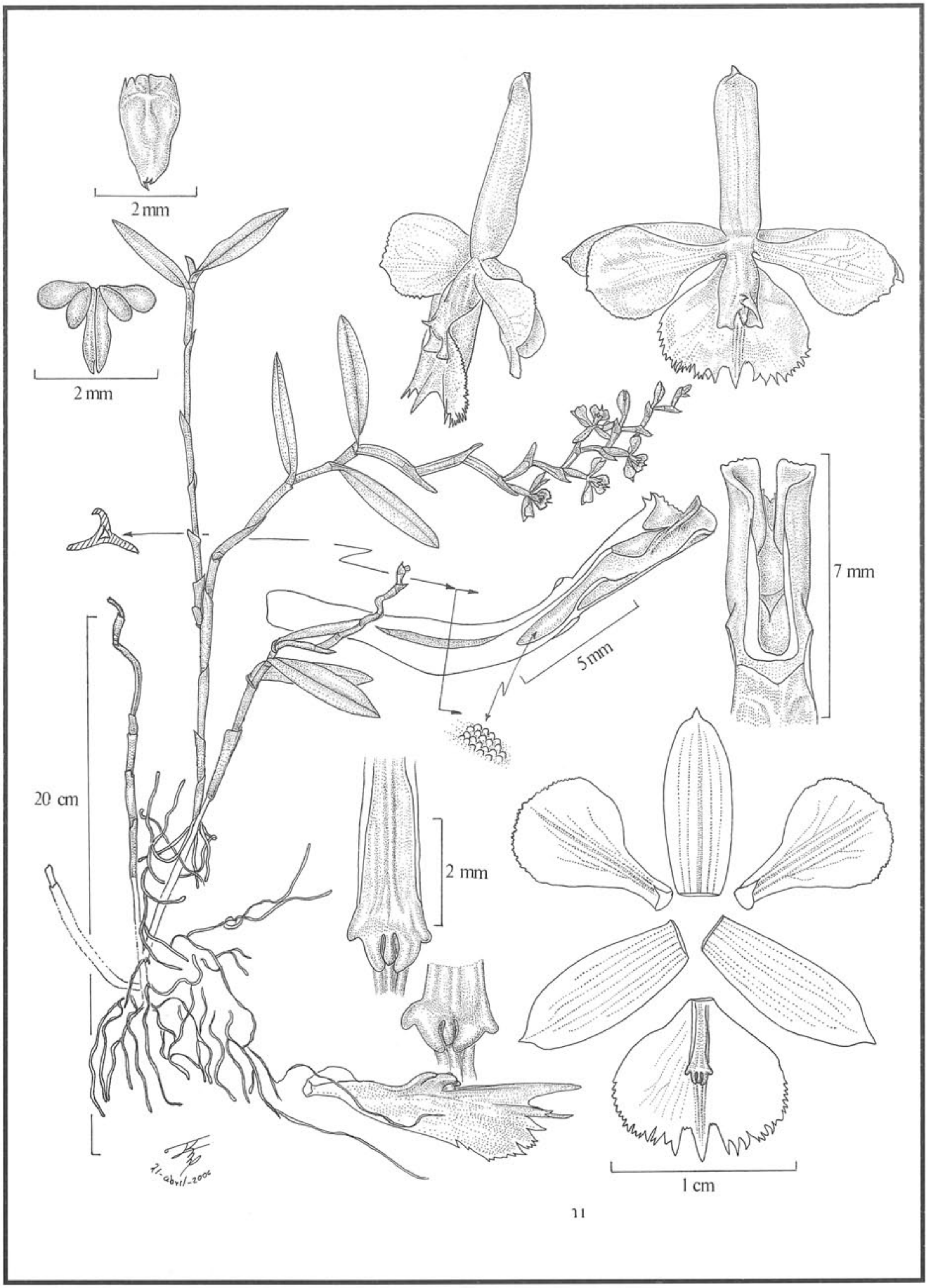
RECOGNITION: *Epidendrum batesii* belongs to the Cardiophyllum Group, Batesii Subgroup, which is characterized by the monopodial main stem with a subapical branching habit, acute leaves, successive, essentially non-resupinate flowers, opening one at a time, deep nectary, entire to 3-lobed lip with the lateral lobes more or less fimbriate to erose. *Epidendrum batesii* has green tepals with a white lip, 3-lobed lip with the midlobe short and truncate. It is similar to *Epidendrum oxybatesii* Hágsater & Dodson which has pale, yellowish green, concolorous flowers, acuminate tepals, deeply 3-lobed lip with the semiovate, dolabriform, lateral lobes narrower at the junction, crenate to laciniate margin, and an acicular midlobe. *Epidendrum acrobatesii* Hágsater & Dodson has smaller flowers, (sepals 11-12 mm long), narrower, linear-oblanceolate, 1-veined petals and a truncate, obcuneate midlobe. *Epidendrum silverstonei* Hágsater has, oblanceolate, rounded, 3-veined petals and an entire, suborbicular, deeply cordate lip. *Epidendrum farallonense* Hágsater has smaller flowers, and a large, rectangular, truncate midlobe of the lip. *Epidendrum laceratum* C. Schweinf. has narrow, linear-elliptic leaves, small flowers (5.5-6 mm long sepals), linear-elliptic, 3-veined petals and an entire, deeply lacerate lip with an entire, triangular-ovate, obtuse apex. *Epidendrum cardiobatesii* Hágsater & Dodson has oblong, subrounded leaves, 15-16 mm-long sepals, linear-elliptic, 3-veined petals and a deeply heart-shaped, apiculate lip.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Will L. Bates of Corpus Christi, Texas who has supported orchid work for many years, was a member of the Board of Trustees of the American Orchid Society and maintained a marvelous collection of orchids species and hybrids. He participated in the collection of the type.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM BICUNICULATUM Hágsater & E.Santiago

Plate 913

EPIDENDRUM BICUNICULATUM Hágsater *et* E.Santiago*, sp. nov.*

Type: COSTA RICA: Cartago: Near and along crest of ridge S of Alto Patillos (and a continuation of the latter), ca. 6 km SE of Tapantí, 9°43'N 83°46.5'W, 1700-1840 m, 9 October 1986, ***Michael H. Grayum & Gerardo Herrera 7716.*** Holotype: MO! (Illustration voucher.) Known only from the type.

Epidendro epidendroidei (Garay) Mora-Retana & J. García simile sed inflorescentia racemosa, floribus leviter minoribus, albis ex magenteo suffusus, petalis obtusis, labello subintegro late obovato, columna dentem apicalem ferenti et interne cum cavitate cuniculata in ovarium non penetranti, callo 5 lobulos subdigitoformes ferenti, discrepans.

Hierba epífita, simpodial, escandente, 17-35 cm de alto. **Raíces** producidas en los entrenudos basales de cada tallo, filiformes, blancas, 0.2-0.8 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales o medios de tallos anteriores, tipo caña, teretes en la base y lateralmente aplanados distalmente, delgados, erectos, rectos, 10-17 x 0.15-0.37 cm; cubiertos en los 2/3 basales por vainas no foliáceas, tubulares, agudas, fibrosas con el tiempo, 10-35 mm de largo. **Hojas** 3, distribuidas cerca del ápice de los tallos, alternas, articuladas; vaina tubular, ligeramente ancipitosa, 10-25 x 2.5-3.7 mm, con una lígula del lado opuesto de la lámina, triangular, subaguda, 0.6-0.8 mm de largo; lámina oblongo elíptica, obtusa, diminutamente apiculada, subcoriácea, margen entero, 4-5.5 x 0.8-1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, pauciflora, laxa, erecta, 13.5 cm de largo; pedúnculo sinuoso, lateralmente aplanado, ancipitoso, 4 cm de largo; provisto en la parte media de una bráctea angostamente triangular, acuminada, tubular en la base y conduplicada en el ápice, ancipitosa, semejante a las florales aunque algo más grande, 1.8 cm de largo; raquis fuertemente fractiflexo, lateralmente aplanado, ancipitoso, 9.5 cm de largo. **Brácteas florales** ca. de ½ del largo del ovario, deltoides, agudas, conduplicadas, ancipitosas, amplexicaules, 4-12 mm de largo. **Ovario** triquetro, trialado, delgado, no inflado, liso, 8-14 mm de largo. **Flores** 10, sucesivas, con la mitad o más abiertas de manera simultánea, no resupinadas, dísticas, sépalos de color ocráceo, pétalos, labelo y columna de color blanco fuertemente teñido con magenta; sin datos de fragancia. **Sépalos** libres, oblongo elípticos, redondeados, aristados, margen extendido, entero, 10 x 3.5 mm; el **dorsal** algo reflexo, 5-nervado; los **laterales** extendidos, 7-nervados. **Pétalos** extendidos, fusionados de manera oblicua a la base de la columna, espatulados, redondeados, 3-nervados, las nervaduras laterales ramificadas a todo lo largo, margen extendido, eroso dentado en el ápice, 9.5 x 6 mm. **Labelo** unido a la columna, trilobado, anchamente obovado en forma general, cuneado, la lámina extendiéndose desde la base de la columna, 8.5 x 9.2 mm; unicalloso, el callo oculto en su totalidad por el ápice de la columna, de diseño complicado, formado por 5 lóbulos subdigitiformes, redondeados y desiguales en forma y longitud, el par lateral corto y algo divaricado, los tres centrales formando un tridente; disco con algunas venas engrosadas frente al callo; lóbulos laterales oblicuamente obovados, redondeados, margen dentado, 4 x 8.2 mm; lóbulo medio muy corto, angostamente triangular, agudo, margen entero, 2 x 2 mm. **Columna** recta, delgada, alargada hasta la mitad del labelo, dorsalmente provista con un diente pequeño, triangular, erecto y agudo en el ápice, márgenes laterales laminares, truncados, formando una estructura tubular, con los lados verticalmente canaliculados, margen apical eroso dentado, 5 mm de largo. **Clinandrio** reducido, bilobado, margen eroso. **Antera** 4-locular, angostamente ovoide, con una quilla dorsal baja, el ápice con el margen escasamente ciliado. **Polinios** 4, angostamente obovoides; caudículas 2, laminares, duras, del doble del largo de los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, penetrando ¼ del ovario, no inflado, cortamente papiloso, con un cunículo adicional en la base del labelo, corto, tan amplio como el nectario mismo. **Cápsula** no vista.

Epiphytic, sympodial, scandent **herb. Roots** produced from the basal internodes, filiform. **Stems** simple, new stem produced from a basal to middle internodes of the previous stem, cane-like, terete below, laterally compressed above, thin, erect, straight; the lower 2/3 covered by non-foliaceous, tubular, acute sheaths, becoming fibrous with time. **Leaves** 3, distributed near the apex of the stems, alternate, articulate; sheath tubular, somewhat ancipitose, with a short, triangular, subacute, ligule opposite the blade; blade oblong-elliptic, obtuse, minutely apiculate, subcoriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, lax, few-flowered, erect; peduncle sinuous, ancipitose; provided in the middle with a narrowly triangular, acuminate bract, similar but larger than the floral bracts; rachis strongly zigzag, ancipitous. **Floral bracts** about half as long as the ovary, deltoid, acute, conduplicate, ancipitose. **Ovary** triquetrus, 3-winged, thin, smooth. **Flowers** 10, successive, half or more are open at one time, non-resupinate, distichous, sepals tawny-colored, petals, lip and column white strongly tinged with magenta. **Sepals** free, oblong-elliptic, rounded, aristate, margin entire, spreading; the dorsal sepal somewhat reflexed, 5-veined, the lateral sepals spreading, 7-veined. **Petals** spreading, slightly and obliquely fused to the base of the column, spatulate, rounded, 3-veined, the lateral veins branching throughout, margin spreading, erose-dentate apically. **Lip** united to the column, 3-lobed, widely obovate in outline, base cuneate, the blade spreading from the base of the column; callus hidden by the apex of the column, complicated, forming 5 somewhat digitiform, rounded to acute lobes, unequal in shape and length, the lateral pair short and somewhat divaricate, the 3 central lobes forming a trident; disc with several thickened veins in front of the callus; lateral lobes obliquely obovate, rounded, the apical margin dentate; midlobe very short, narrowly triangular, acute, margin entire. **Column** straight, thin, elongate, reaching the middle of the lip, dorsally provided with a small, erect, acute tooth, lateral margins laminar, truncate, forming a tubular structure, with each side vertically canaliculate, apical margin erose-dentate. **Clinandrium-hood** reduced, two-lobed, margin erose. **Anther** 4-celled, narrowly ovoid, with a low, dorsal keel, the apex scarcely ciliate. **Pollinia** 4, narrowly obovoid; caudicles 2, laminar, hard, twice as long as the pollinia. **Rostellum** subapical, slit. **Nectary** shallow, penetrating ¼ of the ovary, not inflated, short-papillose, with an additional, short, cunicule at the base of the lip, about 1/3 the length of the column, about as wide as the nectary proper.



DISTRIBUTION AND ECOLOGY: Endemic to Tapantí, Costa Rica, epiphytic, 1700-1840 m altitude; growing sympatric with *E. wercklei* Schltr. and at higher altitude than *E. epidendroides*. Flowering in October.

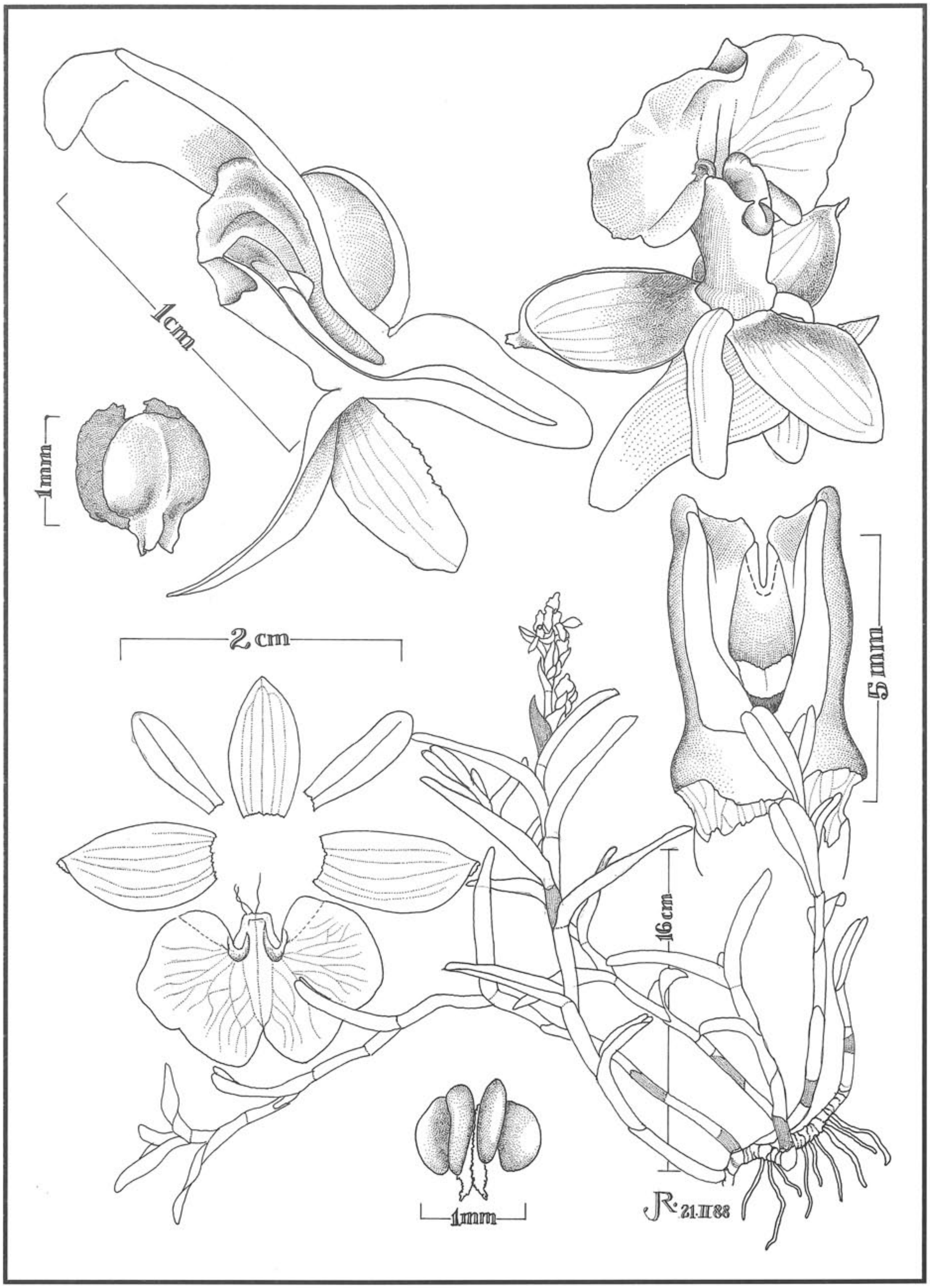
RECOGNITION: *Epidendrum bicuniculatum* belongs to the Neowilliamsia Group.The species is recognized by the simple inflorescence, strongly zigzag rachis, white petals, lip and column heavily tinged with magenta, lip cuneate, widely obovate in outline, the apical margin dentate, with a very small, narrowly triangular midlobe, petals spatulate, rounded, column with an apical, erect, acute tooth, ovary triquetrus. *E. epidendroides* (Garay) Mora-Retana & J. García has a strongly zigzag, paniculate inflorescence, sepals 11-14 mm long, flowers yellowish tinged with red-brown, lip 3-lobed, lateral lobes subquadrate, midlobe long, linear. *Epidendrum spathulipetalum* Hágsater & Dressler has a paniculate inflorescence with numerous pink-white flowers, sepals 7-8 mm long, lip clearly 3-lobed, margin of lateral lobes erose to deeply laciniate, midlobe acicular.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *bi-*, two-, and *cuniculatus*, an underground rabbit-hole, in reference to the twice-cuniculate nectary, or a gallery within the nectary, which appears to be unique to this species.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM BILOBATUM Ames Plate 914

EPIDENDRUM BILOBATUM Ames, Sched. Orchid. 7: 3. 1924.

Type: COSTA RICA: [Cartago:] Cachí, 4000 ft, 5 August 1923, Flowers pale apple green (yellowish), ***C. H. Lankester 509.*** Holotype: AMES 27247! [The type is from a cultivated plant, and the locality cited as the origin could be a mistaken label, as it does not correspond to the known distribution of the species.]

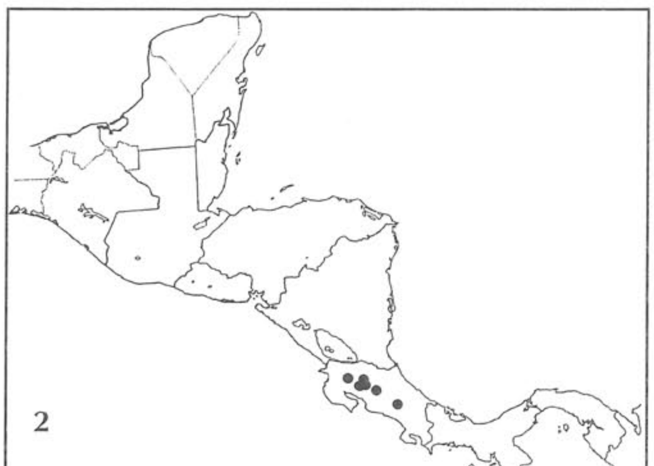
Hierba epífita, simpodial, subcespitosa, 17-45 cm de alto. **Raíces** basales, carnosas, a lo largo del rizoma, 0.3-1.7 mm de grosor. **Tallos** sencillos, tipo caña, erectos, teretes en la base, lateralmente aplanados hacia el ápice, separados por el rizoma el cual mide 1-4 cm, 11-35 x 0.25-0.75 cm. **Hojas** 4-10, distribuidas a lo largo del tallo, la primera y la última generalmente más pequeñas; vaina tubular, estriada, 2.5-4.5 (6) cm de largo; lámina angostamente elíptica, ápice retuso a bilobado, 3-11 x 1.2-2.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, dística, secundiflora, erecta, del tallo maduro, florece una sola vez, 6-10 cm de largo; pedúnculo corto, 1.5-3 cm de largo, cubierto por una bráctea oblongo-triangular, con ápice retuso, de 16-23 mm de largo; raquis sinuoso, lateralmente comprimido. **Bráctea floral** más larga que el ovario, ovada, conduplicada, ápice agudo, 12-19 x 5-14 mm (extendida), persistentes en los pedúnculos sin flores, extendidas, espaciadas, algo falcadas hacia adentro. **Flores** 5-7, simultáneas, no resupinadas, secundas, todas volteando hacia el mismo lado del raquis, sépalos y pétalos verde manzana, el labelo verde pálido, fragancia nocturna suave. **Ovario** inflado detrás del perianto, no ornamentado, 10-13 x 1-1.5 mm. **Sépalos** extendidos, libres, glabros, ovados, coriáceos, 5-nervados, margen entero, extendido; el **dorsal** reflexo, acostado sobre el ovario, agudo, 10-14 x 4.5-6 mm; los **laterales** extendidos, cóncavos, ligeramente oblicuos, acuminados, con quilla dorsal prominente hacia el ápice, esta con el margen dentado, 11-15 x 5-6.5 mm. **Pétalos** reflexos, acostados sobre el ovario, angostamente oblanceolados, casi espatulados, redondeados, 3-5-nervados, margen extendido, diminutamente dentado cerca del ápice, 9-13 x 3-4 mm. **Labelo** unido a la columna, bilobado, aspecto general reniforme, cóncavo, cocleado, base cordada, ápice profundamente emarginado, en ocasiones con un pequeño apículo en el seno, margen diminutamente dentado, 7-12 x 13-21 mm; lóbulos del labelo transversalmente ovados, redondeados, con una muesca cerca de la mitad en el margen exterior, margen entero, 5-7 x 8-12 mm; bicalloso, los callos poco evidentes soldados a la base de la columna, tricarinado, las carinas cortas, bajas, poco evidentes, paralelas . **Columna** recta, corta, gruesa, 6-7 mm de largo incluyendo el clinandrio. **Clinandrio** reducido, sin llegar al ápice de la columna, la antera totalmente expuesta por arriba, margen entero. **Antera** ovoide, con una quilla roma al frente, ápice bilobado, los lóbulos agudos, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves, granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** hendido, angostamente elíptico; lóbulos laterales del estigma cubriendo cerca de un tercio del largo de la cavidad estigmática. **Nectario** corto, llegando hasta la zona de inserción del perianto, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, subcaespitose **herb. Roots** basal, fleshy, thin, from the rhizome. **Stems** simple, cane-like, erect, terete at the base, laterally compressed above, the rhizomatous part somewhat elongate. **Leaves** 4-10, distributed throughout the stem, the lower and uppermost generally smaller; sheath tubular, striated; blade narrowly elliptic, apex retuse to bilobed. **Inflorescence** apical, racemose, distichous, secund, erect, from the mature stem, flowering only once; peduncle short, covered by a single, oblong-triangular bract with the apex retuse, slightly longer than the floral bracts; rachis sinuous, laterally compressed. **Floral bracts** longer than the ovary, ovate, conduplicate, apex acute, persistant after flowering, spreading, interspaced, somewhat falcate inwards. **Flowers** 5-7, simultaneous, non-resupinate, secund, sepals and petals apple-green, the lip pale green; fragrance nocturnal, soft, green. **Ovary** inflated behind the perianth, unornamented. **Sepals** free, ovate, glabrous, coriaceous, 5-veined, margin entire, spreading, the dorsal sepals reflexed, acute, the lateral sepals spreading, concave, slightly oblique, acuminate, with a prominent dorsal keel, the margin of the keel minutely dentate. **Petals** reflexed, narrowly oblanceolate, nearly spatulate, rounded, 3-5 veined; margin spreading, minutely dentate towards the apex. **Lip** united to the column, bilobed, reniform, concave, cochleate, base cordate, apex deeply emarginate, sometimes with a small mucro, margin minutely dentate; lobes transversely ovoid, rounded, with a notch in the middle of the outer margin, margin entire; bicallose, the calli small, adnate to the apex of the column, tricarinate, the keels low, parallel and not evident. **Column** straight, thick, short. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, with a low keel in front, apex with two acute, short lobes, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Nectary** short, without penetrating the ovary, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to western Costa Rica, restricted to the western edge of the Cordillera Central in Costa Rica, on old oaks in open oak forest at an altitude of 600-1400 m. Flowering July-February.

RECOGNITION: *Epidendrum bilobatum* belongs to the Spathiger Group, Coriifolium Subgroup characterized by the sympodial growth habit, distichous inflorescence with large, conduplicate bracts, fleshy green secund flowers with narrow petals and reniform lip. The species is distinguished by the subcaespitose habit, stem with 4-10 coriaceous, flat, narrowly elliptic leaves up to 11 cm long, and specially the erect, distichous, ancipitose inflorescence with non-imbricating, non-acuminate bracts, and the distichous, simultaneous apple-green colored flowers. The characteristic interspaced floral bracts 8-10 mm long are reminiscent of *Epidendrum caluerorum* Hágsater, but that species has shorter stems, 8-20 cm long with 3-6 leaves, the peduncle of the inflorescence with 1-7 imbricating bracts, the lip subtrapezoid, truncate at the base instead of cordate. *Epidendrum belloi* Hágsater has a similar number of leaves per stem, but the plants of that species are very large, 45-66 cm tall, the inflorescence has long, triangular bracts and a cordiform lip.



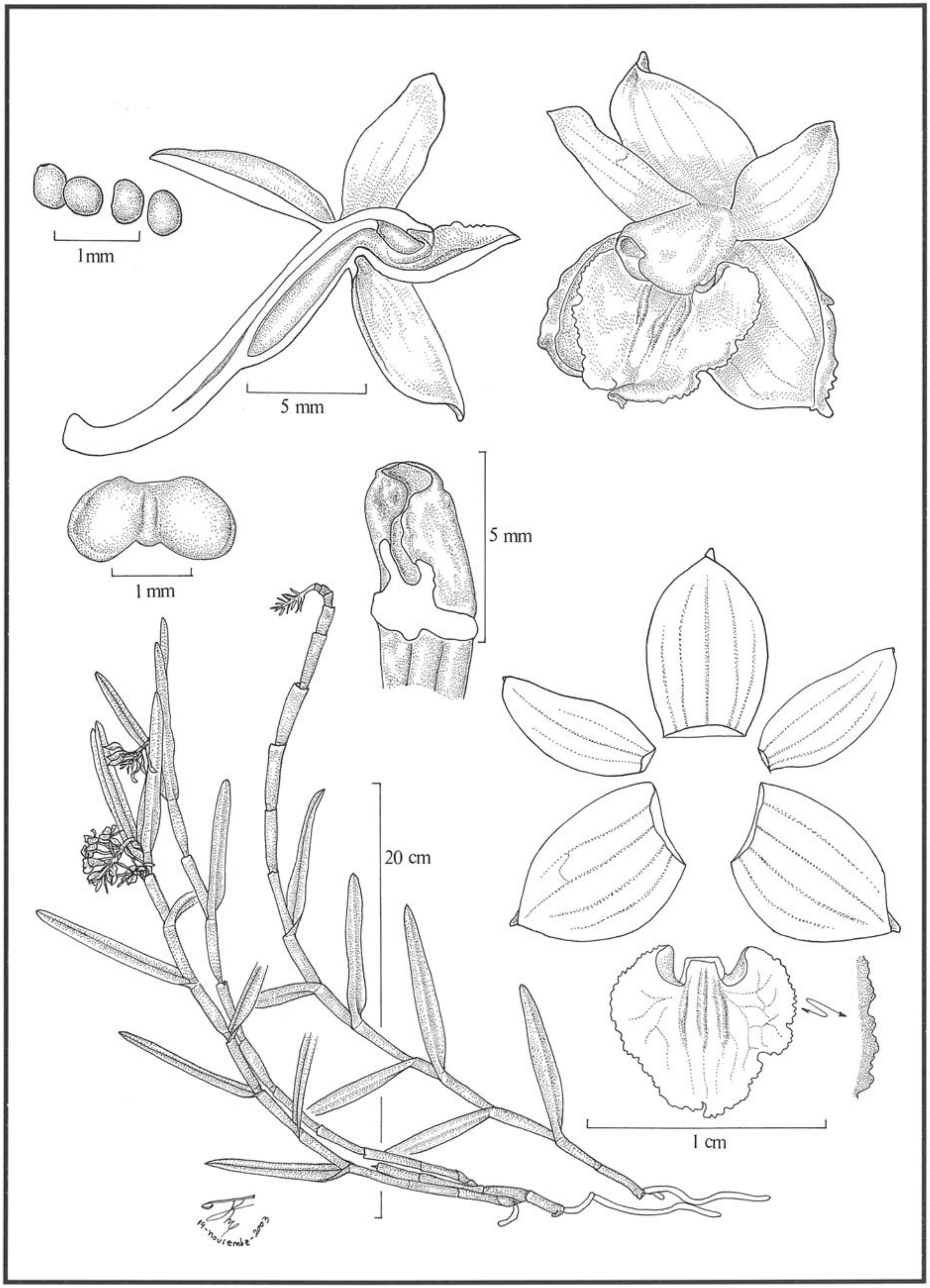
CONSERVATION STATUS: Not threatened. The area above Tilarán, and in general the northern tip of the Cordillera Central in Costa Rica seems to be more or less stable, as far as conservation of the habitat is concerned. There is no collecting pressure as the species is of little horticultural interest. Although infrequent in herbaria, the species seems locally abundant.

ETYMOLOGY: From the Latin *bi-*, two-, and *lobus*, lobe, in reference to the two-lobed lip of this species.

REFERENCES: Mora, D. E. & J. T. Atwood, 1992, *Epidendrum bilobatum* Ames, **Icon. Pl. Trop.** 15: pl. 1430. E. Hágsater, J. García-Cruz & L. Sánchez Saldaña, 2003, in B. E. Hammel, M. H. Grayum, C. Herrera y N. Zamora (eds.) **Manual de Plantas de Costa Rica**, 3: 119.

Authors: R. Jiménez M. & E. Hágsater **Illustrator: R. Peláez** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM CAESARIS Hágsater & E.Santiago **Plate 915**

EPIDENDRUM CAESARIS Hágsater et E.Santiago, *sp. nov.*

Type: COLOMBIA: Norte de Santander: near alto de San Francisco on road to Villacaro, 2750 m, 6 May 1982, ***C. Luer, J. Luer, R. Escobar & D. Portillo 7759.*** Holotype: SEL! (Illustration voucher.)

Epidendro restrepoano A.D.Hawkes in sepalorum petalorumque forma et in sepalorum superficiei abaxialis ornamentatione pustulosa simile; *Epidendro oxysepalo* Hágsater & E.Santiago in florum coloribus et in labelli carinarum numero formaque simile.

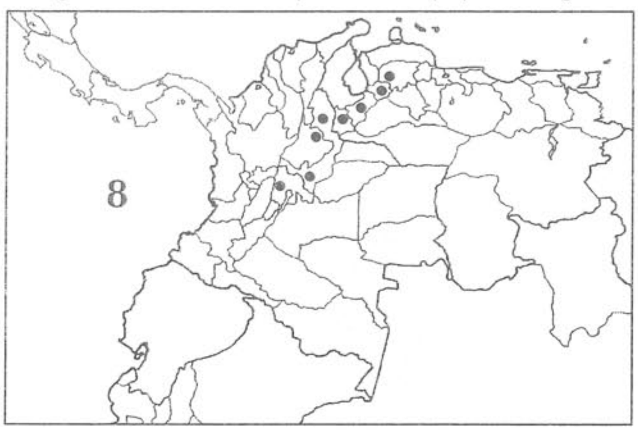
Hierba epífita, ramificada, de 27-36 cm de alto. **Raíces** basales, escasas, carnosas, delgadas, blancas, 1.4-1.9 mm de grosor. **Tallos** tipo caña, teretes, delgados, rectos, 3-34 x 0.3-0.5 cm, produciendo un tallo nuevo cerca del ápice del tallo anterior. **Hojas** 2-15, distribuidas a todo lo largo de los tallos, alternas, suberectas; vaina tubular, ligeramente inflada cuando seca, algo teñida de morado, levemente rugosa, 2-2.9 x 0.3-0.5 cm; lámina oblongo lanceolada, ápice bilobado, con una quilla dorsal baja, margen entero, subcoriácea, lisa, 3.8-8.5 x 0.4-1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, compacta, corta, 2.5-3 cm de largo; pedúnculo terete, delgado, corto, 6-8 mm de largo; desprovisto de brácteas. **Brácteas florales** cerca de la mitad del largo del ovario, angostamente triangulares, acuminadas, las apicales gradualmente más pequeñas, 3-6 mm de largo. **Flores** 4-19, resupinadas, simultáneas; translúcidas, de color rosado pálido, sépalos y pétalos amarillentos en la base; sin datos de fragancia. **Ovario** terete, delgado, ligeramente inflado ventralmente hacia el ápice, escasamente pustulado, 10-13 mm de largo. **Sépalos** extendidos, libres, carnosos, anchamente elípticos, subagudos, con una quilla dorsal prominente, margen entero, dorsalmente pustulados, 8-8.5 x 5-5.2 mm; el **dorsal** 5-nervado; los **laterales** 4-nervados. **Pétalos** extendidos, libres, carnosos, angostamente ovados, subagudos, 3-nervados, oblicuos, margen entero, 7 x 2.9 mm. **Labelo** unido a la mitad basal de la columna, subentero, subcordiforme en aspecto general, base cordada, ápice ligeramente emarginado, margen eroso, involuto en la base, 7.2 x 7.7 mm; ecalloso; provisto de 3-5 quillas, romas, lisas, las tres centrales alargadas hasta la mitad del labelo, el par lateral bajo y generalmente inconspicuo. **Columna** fuertemente arqueada, corta, gruesa, ventralmente provista de un par de alas apicales, redondeadas, no involutas, 5 mm de largo. **Clinandrio** corto, entero. **Antera** reniforme, con una quilla central lisa y baja, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas en dos pares, suaves y granulosas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando menos de la mitad del ovario, ligeramente inflado, liso. **Cápsula** no vista.

Epiphytic, branching, **herb. Roots** basal, scarce, fleshy, thin. **Stems** cane-like, terete, thin, straight, producing a new stem from near the apex. **Leaves** 2-15, distributed throughout the stems, alternate, suberect; sheaths tubular, slightly inflated when dry, minutely striated, tinged purple, and slightly rugose; blade oblong-lanceolate, apex bilobed, with a low dorsal keel, margin entire, subcoriaceous, smooth. **Inflorescence** apical, flowering only once, racemose, arching-nutant, compact, short; peduncle terete, thin, short, without bracts. **Floral bracts** about half as long as the ovary and gradually shorter, narrowly triangular, acuminate. **Flowers** 4-19, resupinate, simultaneous; translucent, pale pink with the base of the sepals and petals yellowish. **Ovary** terete, thin, slightly inflated ventrally towards the apex, scarcely pustulate. **Sepals** spreading, free, fleshy, widely elliptic, subacute, with a promienent dorsal keel, margin entire, dorsally scarcely pustulate; the dorsal 5-veined, the laterals 4-veined. **Petals** spreading, free, fleshy, narrowly ovate, subacute, 3-veined, oblique, margin entire. **Lip** united to the basal half of the column, subentire, subcordiform, base cordate, apex slightly emarginate, margin erose, involute at the base; ecallose, provided with 3-5 smooth, rounded keels, the three middle keels extending to the middle of the lip, the lateral pair low and generally inconspicuous. **Column** strongly arched, short, thick, ventrally provided with a pair of rounded, non-involute, apical wings. **Clinandrium-hood** short, entire. **Anther** reniform, with a central, smooth, low keel, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles in two pairs, soft and granular. **Rostellum** apical, slit. **Nectary** penetrating less than half the ovary, slightly inflated, smooth.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Apparently widespread in the Andes of western Venezuela (Lara, Trujillo, Mérida, Táchira) and northeastern Colombia (Norte de Santander, Santander, Boyacá and Cundinamarca) at around 1780-3160 m altitude. Flowering from May to December. Sympatric with *Epidendrum oxysepalum* Hágsater & E.Santiago and *Epidendrum restrepoanum* A.D.Hawkes

RECOGNITION: *Epidendrum caesaris* belongs to the Diothonea Group characterized by the branching habit, linear-lanceolate to lanceolate, bilobed leaves, arching-nutant, racemose inflorescence, membranaceous or rarely fleshy flowers, entire to 3-lobed lip, with an erose margin, ecallose, with 1-10 thin, glabrous to erose keels, the column united to the lip from totally or obliquely to free, and the reniform anther. This species is recognized by the simultaneous, small, translucent, pale pink flowers with the base of the sepals and petals yellowish, the flowers on a short, compact inflorescence, an arching column, subacute tepals, and a subentire, straight, subcordiform lip with 3-5 keels on the disc of the lip. It is similar to *Epidendrum restrepoanum* which grows in the same general area and has scarlet red flowers with a yellow lip and column, externally warty, pustulate sepals, an arching, nearly completely free column, deeply cordate, three-lobed lip, shallowly emarginate and 5-7 keeled. *Epidendrum oxysepalum* Hágsater & E.Santiago has very similar purple-pink flowers, but with narrower, acute floral segments.

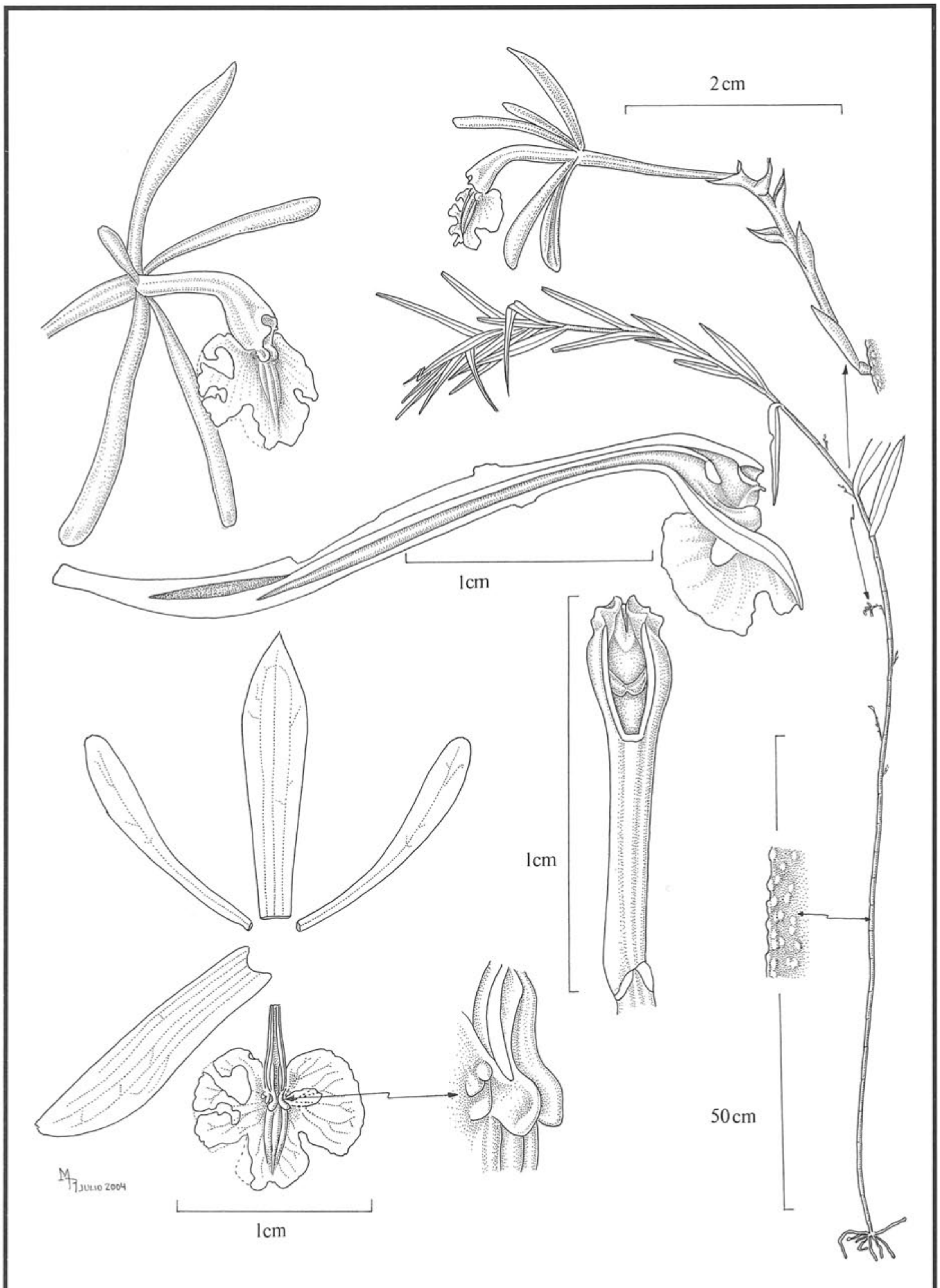


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of César Fernández, Agronomical Engineer of San Cristobal, Táchira, Venezuela who has worked on the orchids of the state of Táchira, and has provided numerous digital photographs, including those of this species.

REFERENCES: Fernández, C., 2003. **Orquídeas nativas del Táchira**. Editorial Litolila, San Cristobal, Táchira, Venezuela. Romero G., G. A. & G. Carnevali F. C., 2000, **Orchids of Venezuela, An Illustrated Field Guide**, 2 ed. Armitano Editores, pg. 289. Caracas, Venezuela.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CANCANAE (P.Ortiz) Hágsater **Plate 916**

EPIDENDRUM CANCANAE (P.Ortiz) Hágsater, Lankesteriana 5(1): 73. 2005.

Basionym: *Oerstedella cancanae* P.Ortiz, Orquideología 22(1): 4. 2001. Type: COLOMBIA: Antioquia, Municipio de Amalfi, Quebrada La Cancana, afluente del Río Porce, 900 m, marzo 2000, ***Luis Guillermo Arango sub Pedro Ortiz Valdivieso 1121***. Holotype: COL.

Synonym: *Epidendrum gymnopodum* Hágsater, Icon. Orch. (Mexico City) 7: pl. 741. 2004. Type: PANAMA: Darién: Parque Nacional del Darién Ridge between N & S branches of Río Púcuro, across river from old Kuna village of Tacarcuna; ca. 18 km E of Púcuro, 8°04′ N 77°16′ W, 600-1000 m, 21 October 1987, ***B. Hammel, G. de Nevers, H. Cuadros & H. Herrera 16342.*** Holotype: MO! (Illustration voucher).

Hierba epífita y terrestre, simpodial, cespitosa, de 1.3-2.6 m de alto. **Raíces** basales, carnosas, delgadas, blancas, 0.6-2.3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos, 130-260 x 0.34-0.65 cm. **Hojas** 20-35 o más, distribuidas en la mitad apical del tallo, articuladas, alternas, gradualmente más pequeñas hacia el ápice; vaina tubular, finamente estriada, verrugosa, 17-42 x 3.4-6.5 mm; lámina angostamente lanceolada, acuminada, subcoriácea, margen entero, 9-18 x 0.7-2 cm. **Bráctea espatácea** ausente. **Inflorescencias** apical y laterales, racemosas, cortas, paucifloras, laxas, 1.5-2 cm de largo; pedúnculo terete, delgado, corto, 6-15 mm de largo; provisto en la base de 2-3 brácteas, pequeñas, tubulares, redondeadas a subagudas, imbricadas, 2-5 mm de largo. **Brácteas florales** mucho más cortas que el ovario; angostamente triangulares, agudas, abrazadoras, 3-5 mm de largo. **Flores** 4-5 por racimo, simultáneas, resupinadas, blancas, ovario, sépalos y columna levemente teñidos de verde rosado; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 17 mm de largo. **Sépalos** extendidos, libres, subagudos, margen entero, revoluto, 14.5-16 x 3.5-5 mm; el **dorsal** oblanceolado, 3-nervado; los **laterales** oblongo elípticos, oblicuos, 5-nervados. **Pétalos** extendidos, libres, linear oblanceolados, unguiculados, ápice redondeado, 1-nervados, margen entero, revoluto, 14-16 x 1.7-2 mm. **Labelo** unido a la columna, 3-lobado, convexo, base cordada, margen ligeramente eroso, 8-10 x 12-15 mm; bicalloso, los callos globosos, algo lateralmente aplanados, cortos; disco provisto de tres quillas delgadas, lisas, que se desvanecen antes de llegar al ápice del lóbulo medio; lóbulos laterales reniformes, redondeados, la base de los mismos con venas engrosadas radiantes y 3 protuberancias redondeadas diminutas, ubicadas a cada lado de los callos, 5-7 x 6-7 mm; lóbulo medio anchamente romboide, formando un istmo angosto y corto en la base, el ápice emarginado, formando un par de lóbulos subcuadrados, redondeados, algo falcados, 3 x 4 mm. **Columna** corta, ligeramente arqueada, 9-10 mm de largo. **Clinandrio** corto, sin sobrepasar el cuerpo de la columna, margen entero, lateralmente con un par de dientes subagudos, pequeños. **Antera** no vista. **Polinios** 4, lateralmente aplanados. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando la ½ del ovario, delgado, no inflado, liso. **Cápsula** no vista.

Epiphytic and terrestrial, sympodial, caespitose, tall **herb. Roots** basal, fleshy, thin, white, thick. **Stems** simple, cane-like, terete, thin, straight. **Leaves** 20-35 or more, distributed throughout the apical half of the stem, articulate, alternate, gradually smaller towards the apex; sheath tubular, minutely striated, verrucose; blade narrowly lanceolate, acuminate, subcoriaceous, margin entire. **Inflorescences** apical and lateral, racemose, short, lax, few-flowered; peduncle, terete, thin, short, provided at the base with 2-3 small, tubular bracts, rounded to subacute, imbricating. **Floral bracts** much shorter than the ovary, narrowly triangular, acute. **Flowers** 4-5 per raceme, simultaneous, resupinate, white, ovary, sepals and column slightly tinged with greenish pink. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, subacute, margin entire, revolute, the dorsal sepal oblanceolate, 3-veined, the lateral sepals oblong-elliptic, oblique, 5-veined. **Petals** spreading, free, linear-oblanceolate, unguiculate, apex rounded, 1-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, convex, base cordate, margin slightly erose; bicallose, the calli globose, somewhat laterally compressed, short; disc provided with 3 thin, smooth keels, which disappear before reaching the apex of the midlobe; lateral lobes reniform, rounded, the base with thickened, radiating veins and 3, minute, rounded protuberances on each side of the calli; midlobe widely rhomboid, with a short, narrow isthmus at the base, the apex emarginate, forming a pair of subquadrate, rounded, somewhat falcate lobes. **Column** short, slightly arching. **Clinandrium-hood** short, margin entire, laterally with a pair of small, subacute teeth. **Pollinia** 4, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating ½ of the ovary, thin, not inflated, smooth.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known from the basin around the Golfo del Darién, on the northern edge of the Cordillera Central in Colombia, and the Serranía del Darién, terrestrial and epiphytic, at 600-1000 m altitude. Flowering from October to March.

RECOGNITION: *Epidendrum cancanae* belongs to the Aggregatum Group, characterized by the caespitose habit, cane-like stems, sometimes branching around the middle, with several short, racemose, lateral inflorescences, and the Bambusiforme Subgroup which has non-branching canes, a single bract per flower, the lip 3-lobed, and a column with a reduced clinandrium-hood. The species is recognized by the long, narrow leaves, subsessile lateral inflorescences, the 3-lobed lip, with an erose margin, and a long, arching column, the flowers white, with the column, sepals and petals slightly tinged greenish pink. *Epidendrum infaustum* Rchb.f. has somewhat smaller flowers, sepals about 10 mm long, and the midlobe of the lip entire, acute. *Epidendrum neocauliflorum* A.D.Hawkes also has smaller flowers, sepals 9 mm long, and an apically truncate midlobe. *Epidendrum bambusiforme* Kraenzlin has taller plants, larger leaves, 10-14 flowers, greenish-ochre with a white lip, a shorter, straight column, the sepals are 13 mm long.

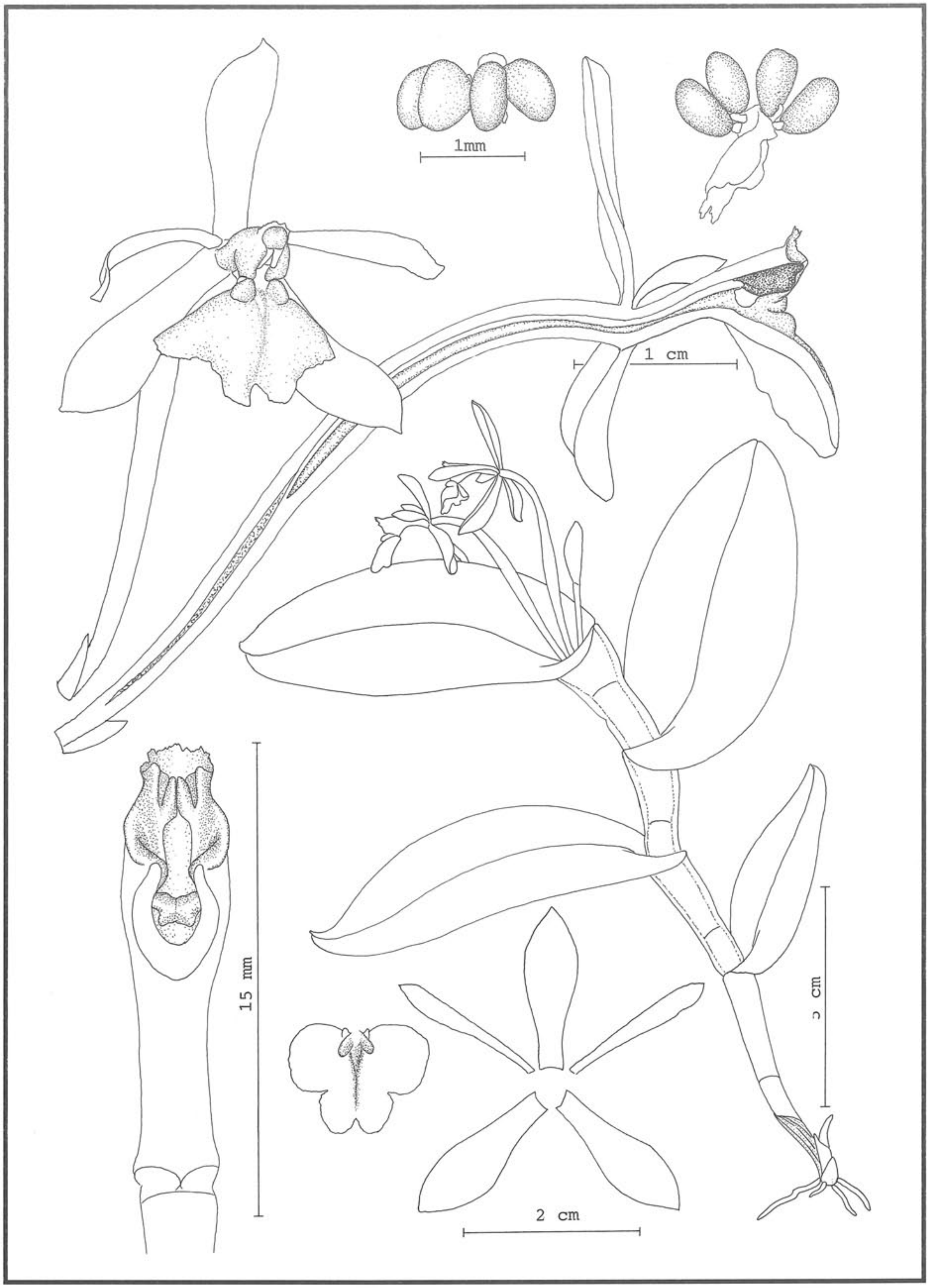


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the place where the type was collected, the canyon of "La Cancana" in northern Colombia.

REFERENCES: Hágsater, E., & M. A. Soto Arenas, 2005. Transfers to *Epidendrum* L. from *Oerstedella* Rchb.f., **Lankesteriana** 5(1): 73.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CANDELABRUM Hágsater

Plate 917

EPIDENDRUM CANDELABRUM Hágsater, Orquídea (Mexico City). 11: 23-25, fig. p. 34, 1989.

Type: COSTA RICA: Alajuela: Camino Vara Blanca-Cariblanco; prensado de material cultivado 19 mayo 1982, ***Eric Hágsater, Robert L. Dressler, C. Horich y W. & B. Thurston 6696.*** Holotype: AMO! Clonotypes: pressed 25 septiembre 1982, AMES! pressed 19 abril 1983, CR! pressed 18 junio 1983, K! MO! USJ! pressed 15 mayo 1984, BR! F! US!

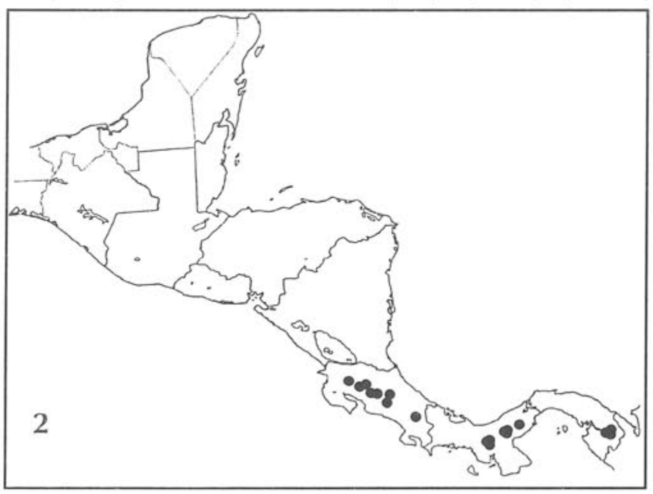
Hierba epífita, simpodial, cespitosa, 10-23 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, filiformes, 0.5-1 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, flexuosos, 3-15 x 0.2-0.4 cm. **Hojas** 2-4(6), distribuidas a lo largo del tallo, progresivamente más grandes hacia el ápice incluyendo la apical, con venación evidente; vaina foliar algo lateralmente comprimida, lisa, 1.5-3 cm de largo; lámina ovado lanceolada a elíptica, angosta y desigualmente bilobada, margen entero, subcoriácea, lisa, verde claro, 3-11 x 0.9-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, subcorimbosa, pedúnculo inconspicuo. **Bráctea floral** mucho más pequeña que el ovario, extendida, ovada, aguda, 2.8-3 x 1.4 mm. **Flores** 1-3, simultáneas pero abriendo en sucesión, generalmente 1-2 abiertas con presencia de un botón en desarrollo, resupinadas, verde pálido, el labelo algo más oscuro, aparentemente sin fragancia. **Ovario** ligeramente inflado ventralmente en la mitad distal, terete, no ornamentado, 42-65 x 1.4-1.7 mm. **Sépalos** extendidos, libres, agudos, subcoriáceos, glabros, 5-nervados, margen entero, extendido, 18-25 x 6-8 mm, el dorsal obovado oblanceolados, los laterales rectos, ovados elípticos. **Pétalos** parcialmente abiertos a extendidos, libres, angostamente oblanceolados, agudos, membranáceos, 3-nervados, margen entero, extendido,17-22 x 2.5-3.5 mm. **Labelo** unido a la columna, trilobado, base ligeramente cordada, 9-12 x 15-18 mm; bicalloso, los callos cortos, subglobosos, divergentes, disco con una carina central, carnosa y gruesa en la base, delgada hacia el apice, la cual se prolonga hasta cerca del ápice del labelo; lóbulos laterales suborbiculares, margen entero, 5-5.5 x 7-9 mm; lóbulo medio más grande que los laterales hasta subiguales, subcuadrado con un seno profundo en el ápice formando dos lóbulos semiovoides, margen entero, 3-4.5 x 5.5-8 mm. **Columna** recta a ligeramente arqueada, delgada, 12-16 x 1.3-1.7 mm. **Clinandrio** sobrepasando ligeramente al ápice de la columna, entero, margen eroso. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, subiguales, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, mucho más cortas que los polinios; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, de 1/4 de la longitud de la cavidad estigmática. **Nectario** profundo, penetrando la mitad del ovario, angosto, liso. **Cápsula** elipsoide, pedicelo de 20 mm de largo, cuerpo de 45-55 x 16-17 mm, cuello corto, de 10 mm de largo.

Epiphytic, caespitose, sympodial **herb. Roots** basal, fleshy, filiform. **Stems** simple, cane-like, somewhat laterally compressed, flexuous. **Leaves** 2-4(6), distributed throughout the stem, progressively larger towards the apex, including the apical leaf, with evident venation; sheath foliar, somewhat laterally compressed, smooth; blade lanceolate-ovate to elliptic, narrowly and unequally bilobed, subcoriaceous, smooth, light green, margin entire. **Inflorescence** apical, from the mature stem, subcorymbose, peduncle reduced. **Floral bracts** much shorter than the ovary, spreading, ovate, acute. **Flowers** 1-3, simultaneous, opening in succession, generally 1-2 open at one time with a developing bud, resupinate, pale green, the lip somewhat darker, apparently without fragrance. **Ovary** slightly inflated ventrally along the distal half, terete, smooth. **Sepals** spreading, free, glabrous, acute, subcoriaceous, glabrous, 5-veined, margin entire, spreading, the dorsal obovate-oblanceolate, the lateral sepals straight, ovate-elliptic. **Petals** partly spreading to spreading, free, narrowly oblanceolate, acute, membranaceous, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate; bicallose, the calli short, subglobose, divergent, disc with a central thickened, fleshy, low keel the base wide, narrow towards the apex, reaching close to the apical sinus; lateral lobes suborbicular, margin entire; midlobe larger to subequal to the lateral lobes, subquadrate with a deep sinus, forming two semiovoid lobes, margin entire. **Column** straight to slightly arching, thin. **Clinandrium-hood** slightly surpassing the column, entire, margin erose. **Anther** subsphaerical, 4-celled. **Pollinia** 4, obovoid, subequal, laterally compressed, subequal; caudicles soft and granulose, much shorter than the pollinia; viscidium viscous, translucent. **Rostellum** apical, slit. **Nectary** deep, penetrating half the ovary, narrow, smooth. **Capsule** ellipsoid, pedicel long, apical neck about half the length of the pedicel.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread from the Cordillera Central in Costa Rica to the Darien in eastern Panama. Epiphytic in humid forests, generally along streams, at 600-1700 m altitude. Flowering throughout the year, but mainly from June to September,

RECOGNITION: *Epidendrum candelabrum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species is easily recognized from others in the group by the progressively larger, ovate-lanceolate to elliptic leaves with evident venation, the somewhat laterally compressed, flexuous stems and flowers simultaneous, opening in succession, generally 1-2 open at one time with a developing bud. Other species in the Difforme Group have subequal leaves, with the distal leaf somewhat smaller.

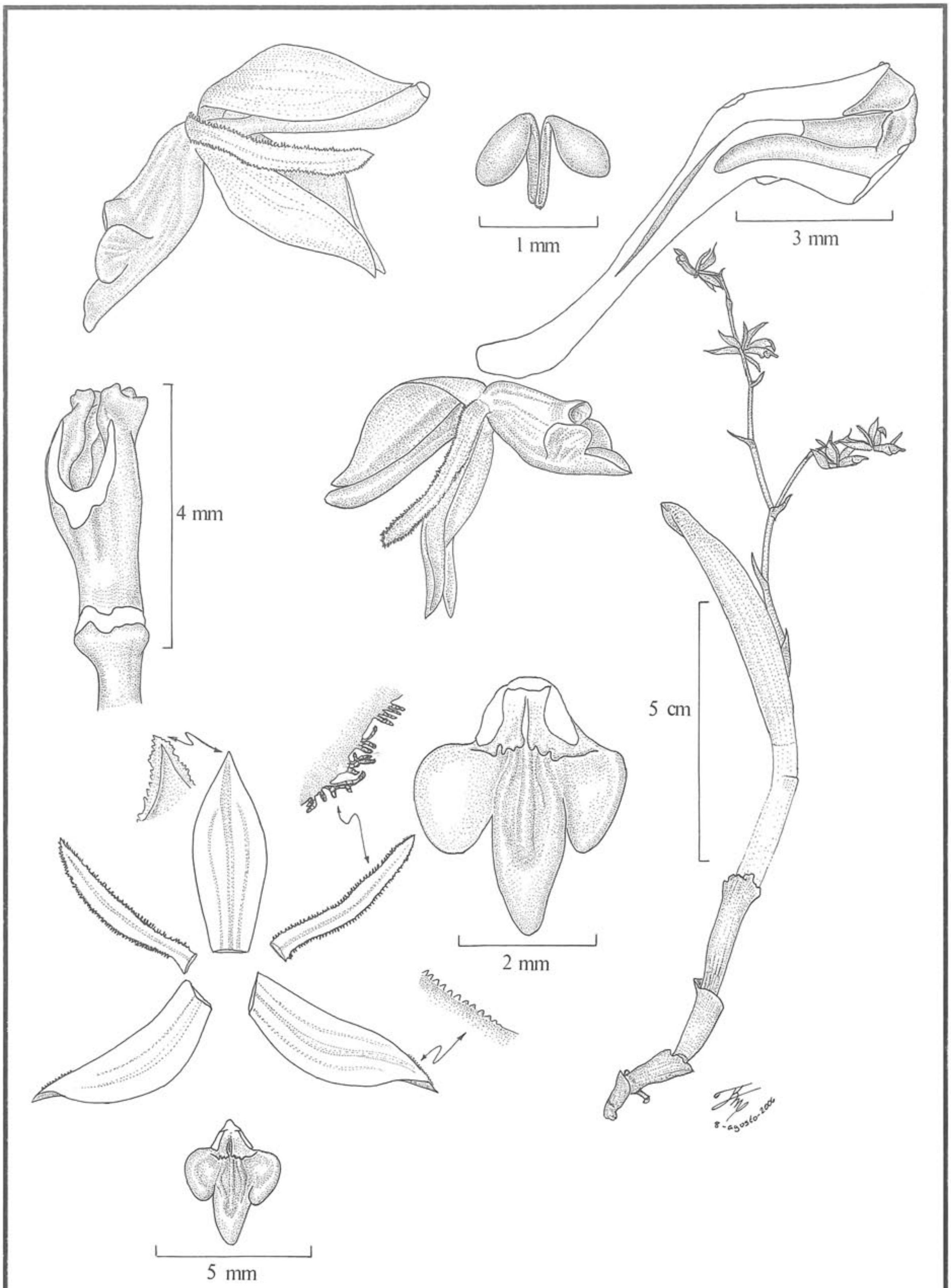


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CONSERVATION STATUS: DD. Data deficient. Probably not threatened, as it is widespread and occurs in disturbed vegetation along streams.

ETYMOLOGY: The specific epithet from the Latin *candelabrum* refers to the upright position of the pollinia as originally illustrated, and which are reminescent of a four-branched candlestick.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CILIIPETALUM (Garay) Hágsater & E.Santiago

Plate 918

EPIDENDRUM CILIIPETALUM (Garay) Hágsater et E.Santiago, *comb. nov.*

Basionym: *Epidanthus ciliipetalus* Garay, Orquideología 4: 157. 1969. Type: COLOMBIA: Antioquia: without proper locality. Cultivated in Jardin Rodrigo Escobar, Medellín, ***Gilberto Escobar 422.*** Holotype: AMES! (Illustration voucher). Isotype: AMO!

Hierba epífita, simpodial, cespitosa, ca. 17 cm de alto. **Raíces** basales, filiformes, glabras. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, 7 cm de largo; cubiertos en su totalidad por 4 vainas tubulares. **Hojas** 2, agregadas en el ápice del tallo, articuladas, alternas, suberectas; vainas tubulares, algo infladas sin llegar a ser infundibuliformes, finamente estriadas, 1.3-1.5 cm de largo; lámina angostamente ovado oblonga, subaguda, coriácea, conduplicada, margen entero, extendido, 6 x 1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, incipientemente paniculada (con una rama corta en la base), erecta, pauciflora, laxa, 10 cm de largo; pedúnculo delgado, lateralmente aplanado, bialado, recto, 5 cm de largo; provisto de 2 brácteas prominentes, angostamente triangulares, agudas a cortamente acuminadas, conduplicadas, amplexicaules, 7-11 mm de largo; raquis lateralmente aplanado, bialado, levemente sinuoso, 5 cm de largo. **Brácteas florales** más cortas a casi tan largas como el ovario, angostamente triangulares, acuminadas, abrazadoras, 2-5 mm de largo. **Flores** 7, simultáneas, no resupinadas, de color verde o verde amarillento con el ápice de la columna blanco; sin datos de fragancia. **Ovario** terete, delgado, no inflado, liso, 5-6 mm de largo. **Sépalos** reflexos, libres, cortamente acuminados, aristados, 3-nervados, margen extendido, 6-7 x 2.5-3 mm; el **dorsal** angostamente obovado; los **laterales** angostamente elípticos, algo falcados, margen superior diminutamente papiloso en el ápice. **Pétalos** reflexos, libres, lineares, cortamente acuminados, 1-nervados, ligeramente falcados, margen densamente ciliado, cada cilio septado, generalmente dendrítico, 6 x 1 mm. **Labelo** unido a la columna, 3-lobado, base truncada, margen entero, 3 x 3 mm; bicalloso, los callos laminares, el ápice de cada callo transverso, diminutamente 3-lobado, bicuniculado, ocultos por el ápice de la columna; disco provisto de 3 quillas prominentes, altas, lisas; lóbulos laterales ovados, redondeados, carnosos, ligeramente cóncavos, abrazando levemente a la columna en posición natural, 1 x 1.7 mm; lóbulo medio angostamente triangular, subagudo, muy carnoso, 1.7 x 1 mm. **Columna** delgada, levemente arqueada en la base, 4 mm de largo. **Clinandrio** prominente, aunque sin sobrepasar el ápice de la columna, margen entero. **Antera** no vista. **Polinios** 2, obovoides; caudículas suaves y granulosas, casi tan largas como los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ligeramente justo detrás del perianto, angosto, no inflado, no ornamentado. **Cápsula** no vista.

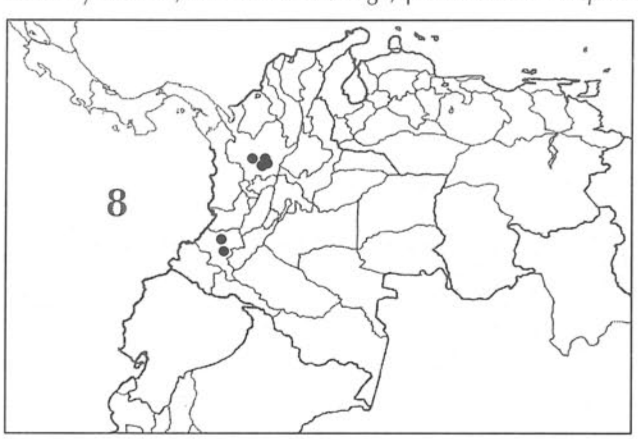
Epiphytic, sympodial, caespitose **herb. Roots** basal, filiform, glabrous. **Stems** simple, cane-like, terete, thin, erect, totally covered by 4 tubular sheaths. **Leaves** 2, aggregate towards the apex of the stem, articulate, alternate, suberect; sheaths tubular, somewhat inflated without being infundibuliform, minutely striated; blade narrowly oblong-ovate, subacute, coriaceous, conduplicate, margin entire, spreading. **Inflorescence** apical, paniculate, with a short branch at the base, erect, few, lax-flowered; peduncle thin, laterally compressed, two-winged, straight, provided with 2 prominent, narrowly triangular, acute to short acuminate, conduplicate bracts; rachis laterally compressed, two-winged, somewhat sinuous. **Floral bracts** shorter than the ovary to nearly as long, narrowly triangular, acuminate. **Flowers** 7, simultaneous, non-resupinate, green or yellowish green with the apex of the column white. **Ovary** terete, thin, not inflated, smooth. **Sepals** reflexed, free, short acuminate, aristate, 3-veined, margin spreading; the dorsal sepals narrowly obovate, the lateral sepals narrowly elliptic, somewhat falcate, upper margin minutely papilose towards the apex. **Petals** reflexed, free, linear, short acuminate, 1-veined, slightly falcate, margin densely ciliate each cilium septate, generally branching. **Lip** united to the column, 3-lobed, base truncate, margin entire; bicallose, the calli laminar, the apex transverse and shallowly 3-lobed, bicuniculate, hidden by the apex of the column; disc provided with 3 prominent, high, smooth keels; lateral lobes of the lip ovate, rounded, fleshy, slightly concave, partly embracing the column in natural position; midlobe narrowly triangular, subacute, very fleshy. **Column** thin, slightly arching at the base. **Clinandrium-hood** prominent, without surpassing the body of the column, margin entire. **Pollinia** 2, obovoid; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** subapical, slit. **Nectary** slightly penetrating behind the perianth, narrow, not inflated, smooth.

OTHER SPECIMENS: COLOMBIA: Antioquia: Frontera Mpio. Guatapé; Vereda quebrada Larga, Fincas Montepina y Las Palmas, 6000 ft, 5 IX 1982, *Albert 2346*, HUA! **Cauca:** High Andes of Popayán, El Imperio nach Agua Negra, 800-1200 m, 1 I 1899, [*F.C. Lehmann sub Bentham*] *Trustees 262*, AMES! K! NY!

OTHER RECORDS: COLOMBIA: Antioquia: La Ceja, 1 XII 1975, cult. by Robledo, *Ortíz Valdivieso 814*, Illustration, HPUJ!

DISTRIBUTION AND ECOLOGY: Endemic to the Cordillera Central of Colombia, from Antioquia down to the neighborhood of Popayán; epiphyte, at 800-1800 m altitude. Flowering from September to January.

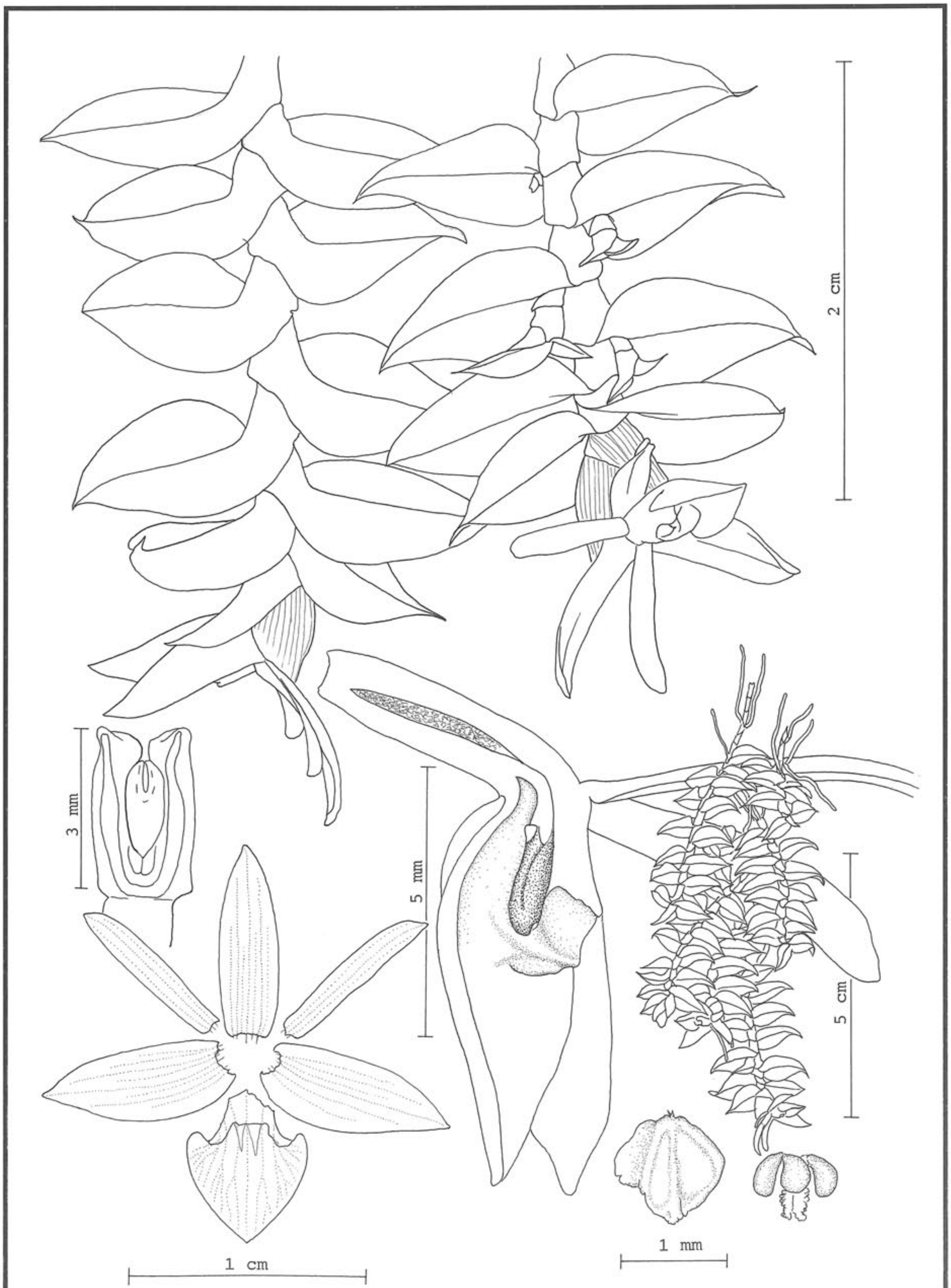
RECOGNITION: *Epidendrum ciliipetalum* belongs to the Lanium Group which is characterized by rhizomatous plants, the stems cane-like to pseudobulbous, leaves generally aggregate towards the apex, flowers non-resupinate, more or less pubescent, pollinia 2 or 4. The species is recognized by the longer stems (7 cm tall), the two apical leaves narrowly ovate-oblong, subacute, suberect and conduplicate, the single-branched, lax-flowered inflorescence, peduncle and rachis straight, with around 7 greenish to yellowish green flowers, petals and sepals reflexed and the lip bicallose, the apex of each callus minutely 3-lobed, the disc with 3 high, prominent keels. *Epidendrum flexuosissimum* C. Schweinf. has short stems (1-3.5 [5]cm tall) with 2 ovate-orbicular, spreading leaves, paniculate, dense-flowered inflorescence with the peduncle and rachis fractiflex, lip bicallose, each callus bidentate, and three short, low keels. *Epidendrum flexuoecallosum* Hágsater & E. Santiago has more leaves (3-6) to each stem, the blades elliptic-lanceolate, acute, the inflorescence paniculate, densely-flowered (up to 25 flowers), sepals and petals spreading, the lip ecallose with 3 low keels.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *cilium*, eyelid, hair-like outgrowth, and *petalum*, petal, in reference to the margin of the petals which are ornamented.

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EPIDENDRUM CONFERTUM Ames & C.Schweinf.

Plate 919

EPIDENDRUM CONFERTUM Ames & C.Schweinf., Sched. Orchid. 10: 61. 1930.

Basionym: *Epidendrum prostratum* Schltr., Beih. Bot. Centralbl. 36(2): 407. 1918. Type: COSTA RICA: La Palma, 1750 m, ***C. Wercklé s.n.*** Holotype: (Herb. O. Jiménez 683) CR! Copy of illustration of type: AMES! Not *Epidendrum prostratum* (Lindl.) Rchb. f. (1873) based on *Physinga prostrata* Lindl.

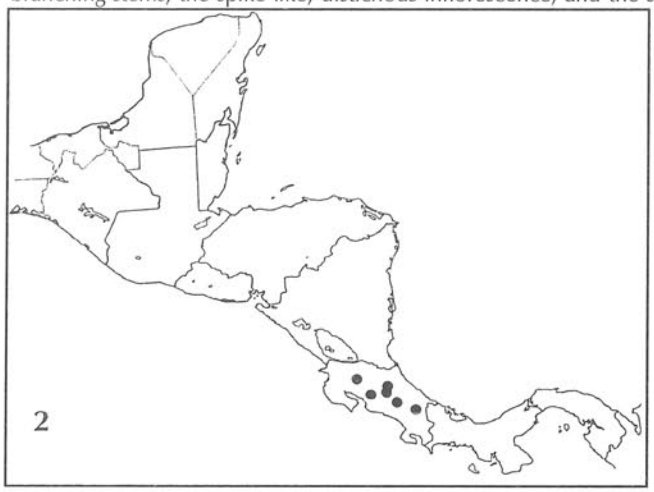
Hierba epífita, postrada a colgante, ramificada, 20-50 cm de largo. **Raíces** basales, ocasionalmente de las ramificaciones en plantas adultas, sencillas, de 1 mm de grosor. **Tallos** tipo *Dichaea*, muy ramificados, teretes, con un tallo basal que se va perdiendo conforme se va ramificando; se producen simultáneamente varias ramificaciones de los entrenudos subapicales del tallo en flor, 3-12 cm de largo. **Hojas** numerosas, distribuidas a todo lo largo de cada tallo y en el mismo plano, perpendiculares al tallo; vainas tubulares, lateralmente comprimidas, cortas, lisas; lámina no articulada, ovada, ápice agudo a acuminado, coriácea, fuertemente carinada, superficie diminutamente rugosa, 5-13 x 3-5 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, uniflora, se produce de cualquiera de las ramificaciones, sésil, provista de 1 bráctea diferente a la floral, triangular, aguda, 4-5.5 mm de largo. **Bráctea floral** ovada, obtusa, 4-5 mm de largo. **Flor** solitaria, no resupinada, verde a blanco verdosas, fragancia no registrada. **Ovario** terete, delgado, liso, geniculado en el ápice, formando un ángulo de 90° con la columna, 4-5 mm de largo. **Sépalos** extendidos, libres, glabros, angostamente elípticos, agudos, sin quillas, 7-nervados, margen entero, extendido, 8-9 x 2.2-2.5 mm. **Pétalos** extendidos, libres, lineares, agudos, 3-nervados, margen entero, extendido, 6.7-8 x 0.8-1 mm. **Labelo** unido a la columna, entero, triangular cordiforme, ápice formando un ángulo recto, casi plano en posición natural, 4-6 x 4.5-5 mm; ecalloso. **Columna** recta, gruesa, 2.5-3 mm de largo, el ápice redondeado y formando un par de engrosamientos interiores transversales frente al rostelo que dejan una apertura muy angosta y alargada a la entrada del nectario. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos; caudículas algo mas largas que los polinios, granulosas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, en la base de la columna. **Nectario** muy corto, apenas traspasando el perianto, no ornamentado. **Cápsula** no vista.

Epiphytic, pendent, prostrate, branching **herb. Roots** basal, occasionally from the branches in adult plants, simple. **Stems** *Dichaea*-like, much branching, terete, the basal stem is hidden with the branching produced simultaneously from several subapical internodes of the flowering stem. **Leaves** numerous, distributed throughout the stems, complanate and perpendicular to the stem; sheaths lateraly compressed, short, smooth; blade not articulate, ovate, apex acute to acuminate, coriaceous, strongly carinate, surface minutely rugose. **Inflorescence** apical, one-flowered, produced from any of the branches, sessile, provided with a single bract different from the floral bract, triangular, acute. **Floral bract** ovate, obtuse. **Flower** solitary, non-resupinate, green to greenish-white. **Ovary** terete, thin, smooth, geniculate at the apex, forming a 90° angle with the column. **Sepals** spreading, free, glabrous, narrowly elliptic, acute, 7-veined, margin entire, spreading. **Petals** spreading, free, linear, acute, 3-veined, margin entire, spreading. **Lip** united to the column, entire, triangular-cordiform, apex forming a right angle, nearly flat in natural position; ecallose. **Column** straight, thick, apex rounded and forming a pair of internal, transverse thickenings in front of the rostellum, leaving a narrow, elongate, aperture at the entrance of the nectary. **Clinandrium-hood** reduced, entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles somewhat longer than the pollinia, granulose. **Rostellum** apical, slit. **Nectary** very short, barely penetrating the ovary, smooth.

OTHER SPECIMENS: COSTA RICA: Alajuela: San Pedro de San Ramon, 1025 m, 7 VII 1925, *Brenes 1328 (125)*, AMES! CR! Colinas de San Pedro de San Ramon, 1125 m, 18 VII 1924 *Brenes 2218(41)*, CR! Colinas de San Pedro de San Ramon, ca. 1000 m, 19 VII 1925, *Brenes 3322*, NY! **Heredia:** El Alto del Conde (north of Monte de La Cruz), 1800-2000 m, 1 VI 1961, *Horich s.n.*, MO! Yerba Buena, northeast of San Isidro, 2000 m, 22 II 1926, *Standley 50159*, AMES! US! Cerros de Zurqui, NE of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50804*, AMES! US! Ibid. *Standley 50830*, AMES! US! Ibid. *Standley 50867*, AMES! US! Cerro de las Caricias, N of San Isidro, 2000-2400 m 11 III 1926, *Standley 52154*, AMES! Ibid. *Standley 52427*, AMES! US! Cerro Zurqui, 13 III 1979, *Todzia 565*, CR! **Limón:** Entre Amurí y el puente sobre el Río Lari, 200 m, 26 VI 1989, *Herrera 3016*, MO! Sukut de Las Juntas de Río Urén y Río Sukut, 350 m, 7 VII 1989, *Herrera 3184*, CR! MO! SEL! **Cartago:** Pejibaye, 1100 m, 22 II 1996, *Blanco 617*, USJ! Heights bonsh of Cartago, *Endres 299*, W! x5 (Illustration). **PANAMÁ: Chiriquí:** Bajo Chorro, 6000 ft, 2 II 1938, *Davidson 246*, AMES! F! MO! Cerro Horqueta, 1700-2300 m, col. 17 III 1981, press. 9 VI 1982, *Hágsater 6530*, AMO! Ibid. press. 20 III 1984, AMO! Ibid. press. 13 XII 1984, AMO! Ibid. press. 22 XII 1984, AMO! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Known from central Costa Rica to western Panama. Epiphyte in wet cloud forest, 200-2400 m altitude. Flowering from March to July.

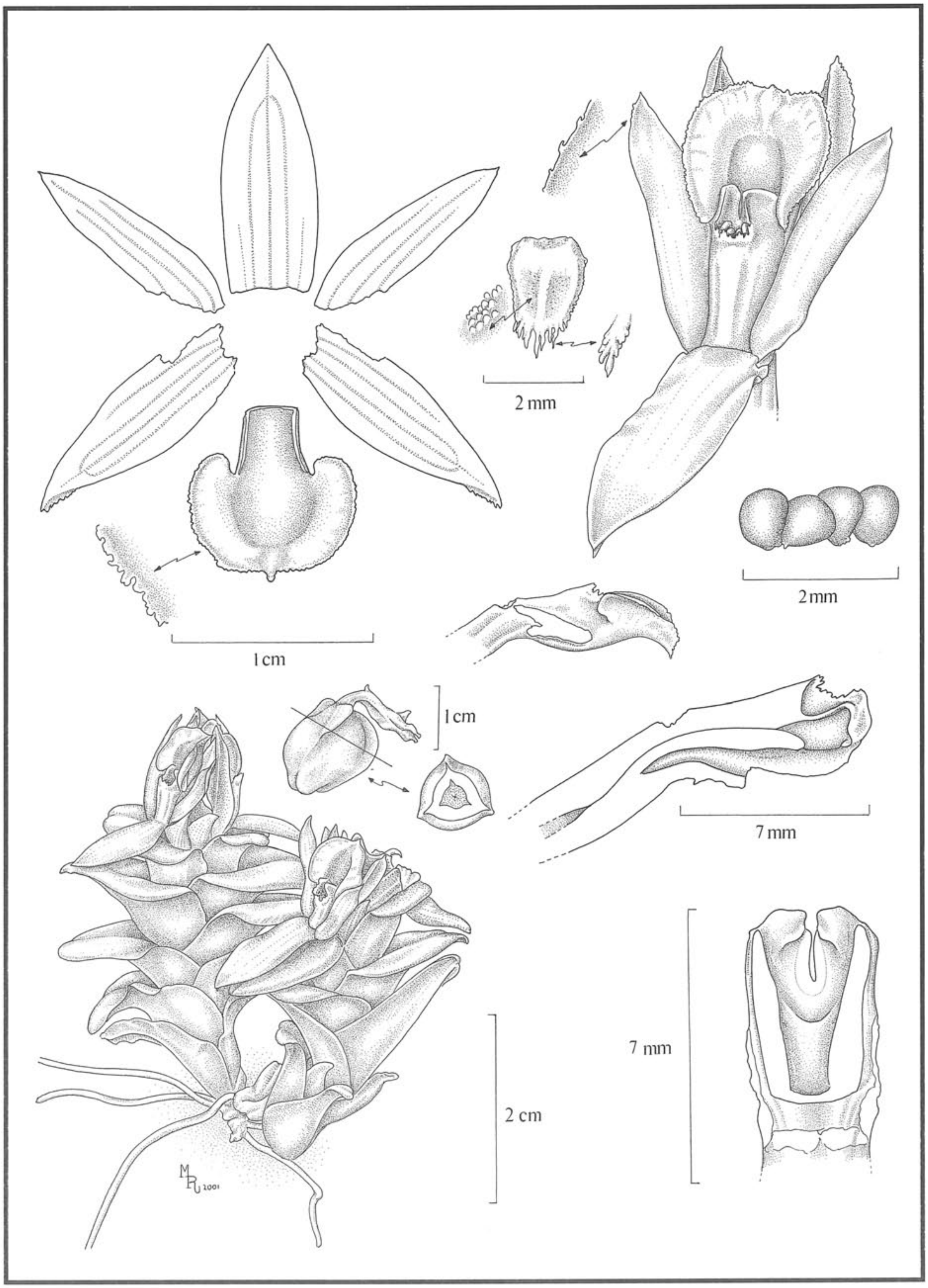
RECOGNITION: *Epidendrum confertum* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, Repens Subgroup, which has pendent plants with small leaves, less than 2.5 cm long. The species is immediately recognized by the *Dichaea*-like vegetative habit, non-articulate, strongly carinate leaves, and the one-flowered inflorescence. *Epidendrum repens* Cogn. and *E. brachyrepens* Hágsater also have one-flowered inflorescences, but the leaves are unequally bilobed and articulate, with more space between the leaves, where the thin stem is clearly visible.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *confertus*, press close together, densely, crowded; in reference to the crowded apearance of the stems.

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EPIDENDRUM CONGESTOIDES Ames & C.Schweinf. **Plate 920**

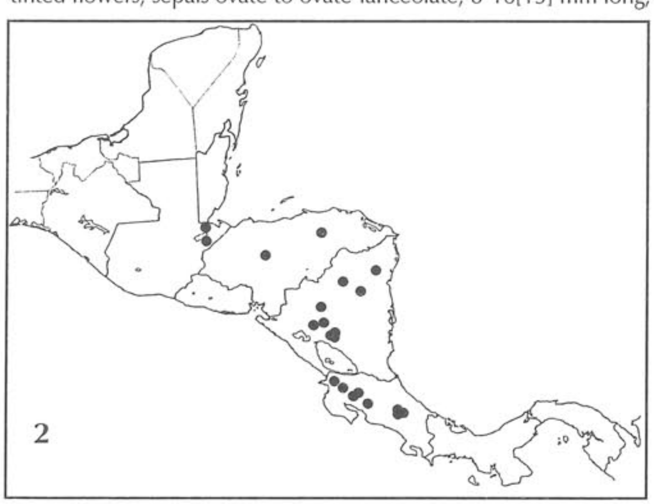
EPIDENDRUM CONGESTOIDES Ames & C.Schweinf., Schedul. Orchid. 10: 61. 1930.

Type: COSTA RICA: Guanacaste: vicinity of Tilarán, 10-31 January 1926, 500-650 m, ***Paul C. Standley & Juvenal Valerio 44933.*** Holotype: AMES 33595 HUH 70227! pro parte.

Hierba epífita, cespitosa, simpodial, 3-4 [6.6] cm de largo. **Raíces** basales, filiformes, 0.3-1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, erectos, totalmente ocultos por la base de las hojas, 2.5-3.5 cm de largo. **Hojas** 7-11, distribuidas a lo largo del tallo, extendidas, dísticas, desiguales, no articuladas, algo imbricadas en la base, suculentas, de color verde glauco, vainas tubulares, lateralmente comprimidas, dilatadas en el ápice, 2-3 mm de largo; lámina oblonga a ovado oblonga, amplexicaula y conduplicada en la base, obtusa, desigualmente bilobada, con una quilla dorsal, margen fuertemente revoluto, ligeramente eroso en la base y diminutamente dentado fimbriado en el ápice, 1.6-2.3 x 0.6-0.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, sésil, comunmente biflora, florece una sola vez. **Brácteas florales** ligeramente más cortas que el ovario, obovadas, redondeadas, conduplicadas, imbricadas, desiguales en tamaño, margen apical dentado, 6-7.3 mm de largo. **Flores** usualmente 2, simultáneas, no resupinadas, carnosas, de color verde, verde bronceado o verdoso con tintes rojo purpúreos; sin datos de fragancia. **Ovario** triquetro, delgado, ligeramente arqueado, no inflado, con 3 quillas ventrales lisas, 5.5-7 mm de largo. **Sépalos** ovado a ovado lanceolados, agudos, margen subentero, extendido, 8-10[13] x 3.2-4.7 mm; el **dorsal** libre, algo reflexo, diminutamente apiculado, con una quilla dorsal lisa y baja, 3-nervado, ocasionalmente con el par de nervaduras laterales cortamente ramificadas dando la impresión de ser 5-nervado; los **laterales** entreabiertos, adnados de manera oblicua a la mitad basal de la columna, 3-4-nervados, algo oblicuos, con una quilla dorsal alta, fuertemente eroso dentada. **Pétalos** adnados de manera oblicua a la mitad basal de la columna, entreabiertos, angostamente lanceolados, agudos, 3-nervados, oblicuos, margen extendido, el ápice diminutamente aserrado, 9-10 [13] x 2-3.3 mm. **Labelo** unido a la columna, entero, carnoso, abrazando parcialmente a la columna en posición natural, reniforme semiorbicular, cordado en la base, ápice mucronado, cóncavo en el centro, algo convexo a los lados, margen hialino, eroso dentado, 4-6 x 5-8 mm; ecalloso, con una quilla apical corta, ancha, redondeada y carnosa. **Columna** delgada, recta, el ápice con un par de lóbulos laterales carnosos, prominentes, algo dirigidos hacia arriba, 4.5-5.8 [6.6] mm de largo. **Clinandrio** reducido, margen cortamente fimbriado dentado. **Antera** ovoide, fuertemente papilosa, 4-locular, margen apical corto e irregularmente fimbriado. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ligeramente el ovario, justo detrás del perianto, no inflado, liso. **Cápsula** globosa, con el perianto persistente, sésil, trialada, las alas desvaneciéndose hacia la mitad basal; cuerpo 13.5 x 11.3 mm; cuello apical, 5 mm de largo.

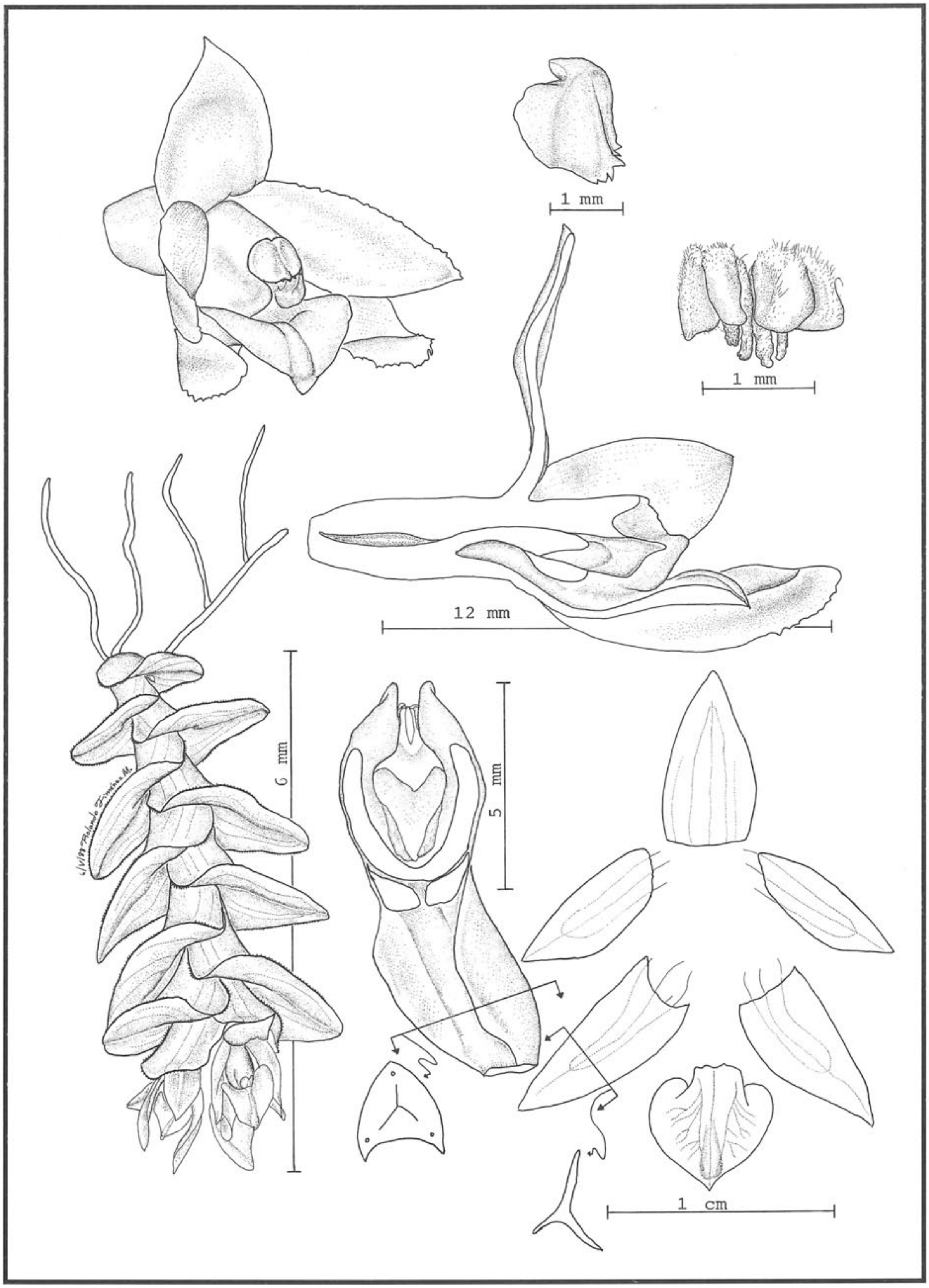
Epiphytic, caespitose, sympodial **herb**. **Roots** basal, filiform. **Stems** simple, cane-like, laterally compressed, erect, totally hidden by the base of the leaves. **Leaves** 7-11, distributed throughout the stems, spreading, distichous, unequal, non-articulate, somewhat imbricating at the base, succulent, glaucous-green color; sheaths tubular, laterally compressed, dilated at the apex; blade oblong to ovate-oblong, amplexicaul and conduplicate at the base, obtuse, unequally bilobed, with a dorsal keel, the margin strongly revolute, slightly erose at the base and minutely dentate-fimbriate at the apex. **Inflorescence** apical, sessile, usually two-flowered, flowering only once. **Floral bracts** slightly sorter than the ovary, obovate, rounded, conduplicate, imbricating, unequal, apical margin dentate. **Flowers** usually 2, simultaneous, non-resupinate, fleshy, green, bronze-green or greenish tinged purple-red. **Ovary** triquetrus, thin, slightly arching, not inflated, with 3 ventral smooth keels. **Sepals** ovate to ovate-lanceolate, acute, margin subentire, spreading; dorsal sepals free, somewhat reflexed, minutely apiculate, with a low, smooth, dorsal keel, 3-veined, occasionally with a pair of short branched, lateral keels, thus appearing 5-veined; the lateral sepals partly spreading, obliquely adnate to the base of the column, 3-4-veined, somewhat oblique, with a high, strongly erose-dentate, dorsal keel. **Petals** obliquely adnate to the basal half of the column, partly spreading, narrowly lanceolate, acute, 3-veined, oblique, margin spreading, entire, minutely serrate. **Lip** united to the column, entire, fleshy, partially embracing the column in natural position, reniform-semiorbicular, base cordate, apex mucronate, center concave, the sides somewhat convex, margin hyaline, erose-dentate; ecallose, with a short, wide, apical keel, the margin dentate. **Column** thin, straight, with a pair of prominent, lateral, apical, fleshy lobes, directed somewhat upwards, margin dentate. **Clinandrium-hood** reduced, margin short fimbriate-dentate. **Anther** ovoid, strongly papillose, 4-celled, apical margin short and irregularly fimbriate. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** slightly penetrating the ovary, just behind the perianth, not inflated, smooth. **Capsule** globose, perianth persistent, sessile, 3-winged, the wings disappearing towards the basal half.

OTHER SPECIMENS AND RECORDS: See appendix.
DISTRIBUTION AND ECOLOGY: widespread in northern Central America, from Guatemala to western Costa Rica, epiphytic, sea level to 1000 [1800] m. Flowering December to February, June.
RECOGNITION: *Epidendrum congestoides* belongs to the Nanodes Group, characterized by the caespitose to creeping, sympodial plants, the short stems completely covered by the base of the non-articulate, fleshy, imbricating leaves; sessile, few-flowered inflorescences. The species is recognized by the two-flowered inflorescence, greenish bronze or reddish-purple tinted flowers, sepals ovate to ovate-lanceolate, 8-10[13] mm long, the lip reniform- semiorbicular, somewhat embracing the short column (4.5-6.6 mm long) in natural position, and the anther is short. *Epidendrum congestum* Rolfe has 2-3, smaller flowers (sepals 7-10 mm long) and the lip cordiform, with the apex acute, anther obovate and apically truncate. *Epidendrum schlechterianum* Ames & C.Schweinf. which has relatively long, greenish purple to olive green flowers tinged with red, the oblong-lanceolate, the sepals 17-20 mm long, and the lip cordate-reniform, minutely apiculate, the column 10-14 mm long with the anther elongate, subacute and apically dentate. *Epidendrum uleinanodes* Hágsater from Manaus to the foothills of the Andes in Ecuador and Peru has 4 flowers, a fimbriate clinandrium-hood and prominent, upturned, rounded lobes at the apex of the column. *Epidendrum neodiscolor* Hágsater with generally narrow, long leaves usually has solitary flowers, the lip widely ovate, the base somewhat cuneate.



CONSERVATION STATUS: DD. Data deficient. Widespread in northern Central America.
ETYMOLOGY: From the Latin *congestum*, referring to the tightly crowded flowers and leaves, and the ending οειδης, resembling, as the species resembles the earlier *E. congestum* Rolfe.

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EPIDENDRUM CONGESTUM Rolfe **Plate 921**

EPIDENDRUM CONGESTUM Rolfe, *in* Kew Bull. 1913. 29. 1913.

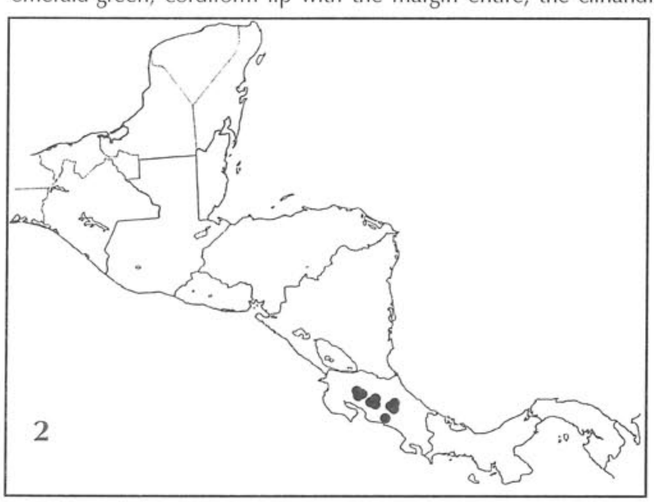
Type: COSTA RICA: Flowered in the Royal Botanic Gardens, Glasnevin, January 1911.
Lectotype [here designated]: watercolor illustration, "Ref. H 140/1923", K! Isolectotype: stem without flowers, AMES 24125!
Synonyms: *Nanodes congestum* Rolfe in Siegerist, Selbyana 7(2-4): 229. 1984. nom. illeg.
Nanodes congesta (Rolfe) Rolfe ex C. Nelson & Fdez. Casas in Fontqueria 51: 4. 1998.

Hierba epífita, cespitosa, simpodial, erecta a colgante, 2-5 cm de largo. **Raíces** basales, filiformes, 0.3-0.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, erectos, rectos, cubiertos en su totalidad por la base de las hojas, 2-4.5 cm de largo. **Hojas** 5-11, distribuidas a lo largo del tallo, dísticas, extendidas, algo imbricadas, amplexicaules, no articuladas, suculentas; vaina tubular, lateralmente comprimida, de 2-3 mm de largo; lámina ovada a ovado oblonga, redondeada, ligeramente bilobada, margen revoluto, diminutamente denticulado, 1.5-2.5 x 0.7-1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, sésil, pauciflora, florece una sola vez. **Brácteas florales** algo más cortas que el ovario, obovadas, oblicuas, redondeadas, conduplicadas, margen dentado, con una quilla dorsal dentada, 7 mm de largo. **Flores** 2-3, simultáneas, resupinadas, carnosas, sépalos y pétalos verde pálido (algunas veces con difuminaciones de color púrpura rojizo), labelo verde esmeralda, columna ligeramente teñida de púrpura rojizo; sin fragancia. **Ovario** triquetro, delgado, no inflado, con 3 quillas ventrales lisas, 6-7 mm de largo. **Sépalos** 3-nervados, el ápice de las nervaduras laterales unido a la nervadura central, margen extendido, entero a levemente dentado en la mitad apical, 7-10 x 4-6 mm; el **dorsal** extendido, libre, ovado, subagudo, cortamente aristado, ligeramente cóncavo; los **laterales** entreabiertos, fusionados de manera oblicua a la columna, cimbiformes en forma general, oblongo lanceolados, ligeramente oblicuos, agudos, aristados, con una quilla dorsal alta, prominentemente erosa dentada. **Pétalos** entreabiertos, fusionados de manera oblicua a la base de la columna, lanceolados a angostamente ovados, agudos, 3-nervados, el ápice de las nervaduras laterales unidas a la nervadura central, margen extendido, eroso-dentado, 6-9 x 2.2-3 mm. **Labelo** unido a la columna, entero, carnoso, ligeramente cóncavo en la base, cordiforme, agudo, margen entero, 4.5-6 x 4-4.2 cm; ecalloso; con una quilla carnosa en el ápice. **Columna** corta, gruesa, el ápice con un par de dientes laterales, carnosos, subagudos, 5-6 mm de largo. **Clinandrio** reducido, entero, margen levemente eroso. **Antera** anchamente ovoidea, ápice algo dentado, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad de la cavidad estigmática. **Nectario** penetrando ¼ del ovario, no inflado, no ornamentado. **Cápsula** globosa, con el perianto persistente, sésil, trialada, las alas desvaneciéndose hacia la mitad basal; cuerpo 11.5-12 x 10-13 mm; cuello apical 2 mm de largo.

Epiphytic, caespitose, sympodial, erect to pendent **herb. Roots** basal, filiform. **Stems** simple, cane-like, laterally compressed, erect, straight, totally covered by the base of the leaves, **Leaves** 5-11, distributed throughout the stems, distichous, spreading, somewhat imbricating, amplexicaul, non-articulate, succulent; sheath tubular, laterally compressed; blade ovate to ovate-oblong, rounded, slightly bilobed, margin revolute, minutely denticulate. **Inflorescence** apical, sessile, few-flowered, flowering only once. **Floral bracts** somewhat shorter than the ovary, obovate, oblique, rounded, conduplicate, margin dentate, with a dorsal, dentate keel. **Flowers** 2-3, simultaneous, resupinate, fleshy, sepals and petals pale green (sometimes tinged with reddish purple), lip emerald green, column slightly tinged with reddish purple. **Ovary** triquetrus, thin, not inflated, with 3 ventral, smooth keels. **Sepals** 3-veined, the lateral veins joined to the midvein above, margin spreading, entire to slightly dentate along the apical half; the dorsal sepal spreading, free, ovate, subacute, short aristate, slightly concave; lateral sepals partly spreading, obliquely fused to the column, cymbiform in general shape, oblong-lanceolate, acute, aristate, somewhat oblique, with a high dorsal keel, the margin prominently erose-dentate. **Petals** partly spreading, obliquely fused to the base of the column, lanceolate to narrowly ovate, acute, 3-veined, the lateral veins fused to the midvein above, margin spreading, erose-dentate. **Lip** united to the column, entire, fleshy, slightly concave at the base, cordiform, acute, margin entire or rarely dentate; ecallose; with a fleshy keel at the apex. **Column** short, thick, the apex with a pair of lateral fleshy, subacute teeth. **Clinandrium-hood** reduced, entire, margin slightly erose. **Anther** widely ovoid, apically truncate and somewhat dentate, 4-celled. **Pollinia** 4, subequal, obovoid, laterally compressed caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/4th of the ovary, not inflated, smooth. **Capsule** globose, the perianth persistent, sessile, 3-winged, the wings disappearing towards the apical half, apical neck short.

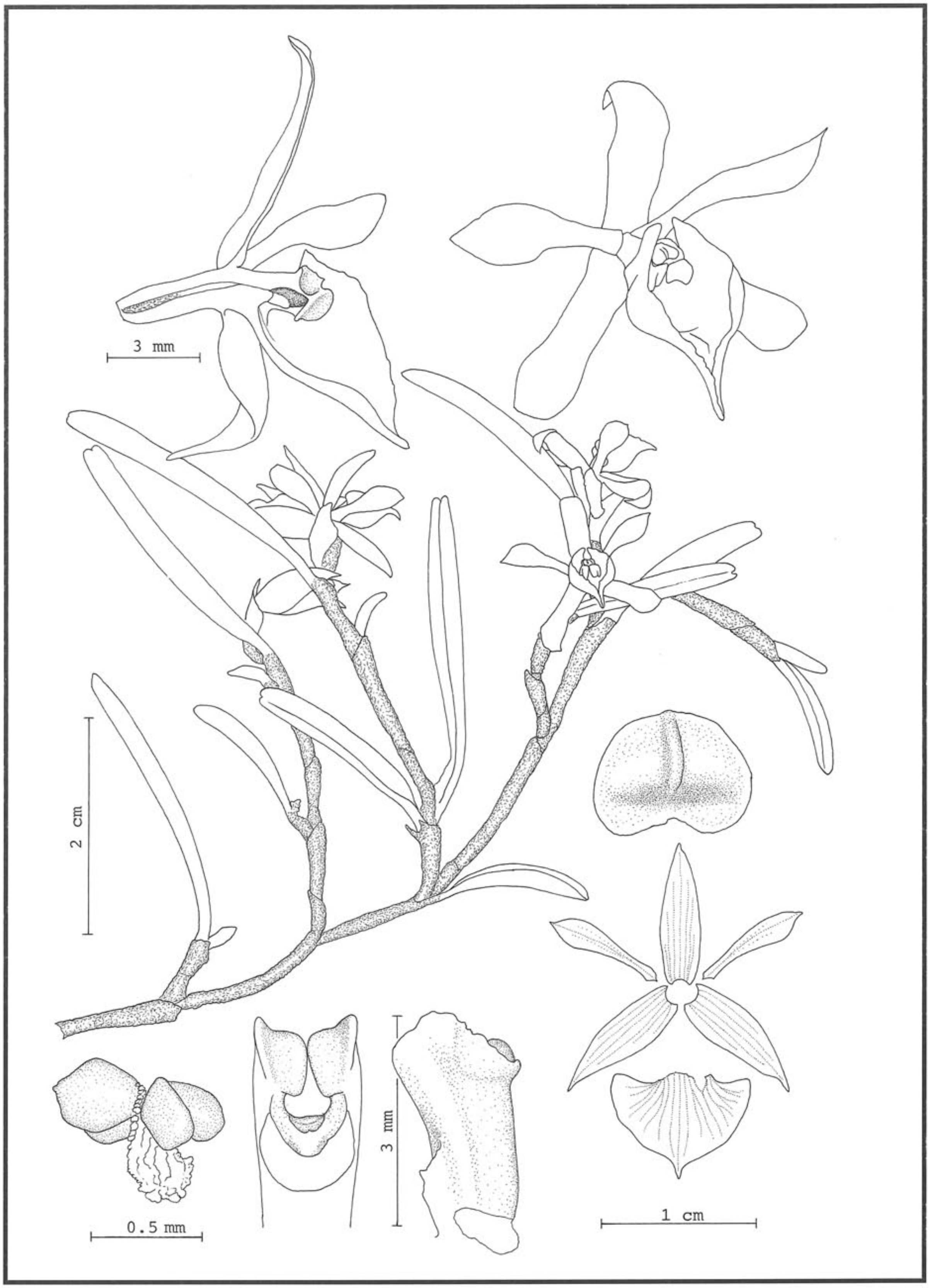
OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to western Costa Rica, epiphytic on oaks in seasonally dry forest, 1300-1650 m altitude. Flowering from November to April.
RECOGNITION: *Epidendrum congestum* belongs to the Nanodes Group, characterized by the caespitose to creeping, sympodial plants, the short stems completely covered by the base of the non-articulate, fleshy, imbricating leaves; sessile, few-flowered inflorescences. The species is recognized by the 2-3 green flowers (sometimes tinged with reddish purple), the emerald-green, cordiform lip with the margin entire, the clinandrium hood somewhat erose, and the apex of the anther truncate and dentate. *Epidendrum congestoides* Ames & C.Schweinf. has a two-flowered inflorescence, greenish bronze or reddish-purple tinted flowers, the lip reniform-semiorbicular, with the base deeply cordate, and the clinandrium hood fimbriate. *Epidendrum schlechterianum* Ames & C.Schweinf. has relatively long flowers, the sepals 17-20 mm long, and the lip cordate-reniform, with the margin irregular dentate, the column 10-14 mm long with the anther elongate, and the clinandrium-hood with the margin deeply lacerate-dentate. *Epidendrum serruliferum* Schltr. has acute floral bracts, an acute triangular to ovate-triangular, short acuminate sepals, the margin of the petals ciliate, and the lip acuminate. *Epidendrum neodiscolor* Hágsater usually has 1-2 flowers purple-colored flowers, the leaves purplish green, and the lip widely ovate with the margin crenulate.



CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: From the *Latin congestum*, referring to the tightly crowded flowers and leaves.
REFERENCES: Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 272, 299, San José C.R. Editorial de la Universidad de Costa Rica.

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EPIDENDRUM CORDIFORME C.Schweinf.

Plate 922

EPIDENDRUM CORDIFORME C.Schweinf., Bot. Mus. Leafl. 8(2): 47. 1940.

Type: COSTA RICA: Alajuela: Palmira, 1900 m, 4 October 1938, ***Austin Smith H 1247.*** Holotype: AMES!

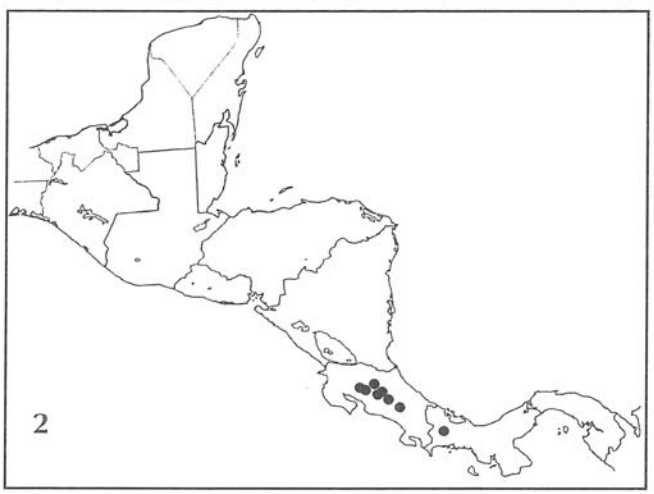
Hierba epífita, monopodial, ramificada, 7–17 cm de alto. **Raíces** basales, filiformes, 0.4-0.7 mm de grosor. **Tallos** tipo caña, muy delgados, teretes, cubiertos completamente por vainas verrugosas, 6-16 x 0.7-1.2 cm; principal erecto, ramificado arriba, las ramificaciones secundarias generalmente de 3-4 entrenudos, producidas del entrenudo subapical, con 2-4 hojas desiguales, los tallos de floración menores. **Hojas** hasta 10 en el tallo principal, 3-4 en los más cortos, la rama floral siempre con una hoja única; vaina foliar tubular, verrugosa, 4-7 mm de largo, lámina elíptico oblonga a linear, ápice desigualmente bilobado, subcoriacea, dorsalmente carinada, lisa, 1.0-2.5 x 0.2-0.5 cm. **Inflorescencia** apical, racemosa, dística, subsésil, 0.8-1 cm de largo; pedúnculo muy corto **Bráctea floral** más larga que el ovario, infundibuliforme, verrugosa, aguda, 5-6 mm de largo. **Flores** 1, raramente 2, resupinadas, color blanco crema, con el ápice de los segmentos, el labelo y la columna teñidos de morado. **Ovario** terete, no ornamentado, 3-4 mm de largo. **Sépalos** glabros, libres, extendidos, lanceolados, agudos, 5-nervados, margen entero, revoluto, 8-10 x 2-2.5 mm. **Pétalos** glabros, libres, extendidos, espatulados a oblanceolados, agudos, 1-nervados, con dos venas laterales hacia la mitad apical, margen entero, extendido, 7-9 x 1.5-2.5 mm. **Labelo** unido a la columna, cóncavo en posición natural, abrazando y cubriendo el ápice de la columna, entero, semiorbicular cordiforme, prominentemente apiculado, base ligeramente cordada, 6-8 × 6-9 mm; ecalloso, disco con venas radiales evidentes, siendo las tres centrales comunmente las más prominentes y la central se prolonga como una quilla prominente hasta el apículo. **Columna** recta, corta, 2-3 mm, provista internamente delante de la cavidad estigmática de un par que crecimientos laminares, transversales que hacen angosta la entrada al nectario. **Clinandrio** reducido, entero. **Antera** reniforme, no ornamentada, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas ligeramente más largas que los polinios, viscidio semilíquido, blanquecino. **Lóbulos laterales del estígma** prominentes penetrando más de 1/2 de la cavidad estigmática. **Nectario** muy corto, sin penetrar el ovario, no ornamentado. **Cápsula** esférica, sésil, cuello apical 1.4 mm de largo, cuerpo 8 x 7.7 mm.

Epiphytic, monopodial, branching **herb. Roots** basal, filiform. **Stems** main stem with up to 10 leaves, branching above, and producing new branches from a subapical internode of the previous branches; the branches generally of 3-4 internodes, with 2-4 un equal leaves; stems cane-like, thin, completely covered by verrucose sheaths. **Leaves** 10 on the main stem, 3-4 on the branches, the flowering branches always with a single leaf; sheath tubular, verrucose; blade oblong-elliptic to linear, subcoriaceous, smooth, dorsally carinate, apex unequally bilobed. **Inflorescence** apical, racemose, distichous, subsessile; peduncle very short. **Floral bract** longer than the ovary, infundibuliform, verrucose, acute. **Flowers** 1, rarely 2, resupinate, creamy white, with the apex of the floral segments, lip and column tinged purple. **Ovary** terete, smooth. **Sepals** glabrous, free, spreading, lanceolate, acute, 5-veined, margin entire, revolute. **Petals** glabrous, free, spreading, spatulate to oblanceolate, acute, 1-veined, with a pair of branching veins at the apical half; margin entire, spreading. **Lip** united to the column, concave in natural position, embracing and covering the apex of the column, entire, semiorbicular-cordiform and prominently apiculate, the base slightly cordate; ecallose, disc with evident radiating veins, the 3 central ones usually prominent, and the mid-vein prolongued into a prominent keel that reaches the apicule. **Column** straight, short, with a pair of internal, transverse, laminar keels near the apex which reduce the access to the nectary. **Clinandrium-hood** reduced, entire. **Anther** reniform, unornamented, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles slightly longer than the pollinia; viscidium semiliquid, whitish. **Nectary** very short, without penetrating the ovary, smooth. **Capsule** spherical, sessile, apical neck short.

OTHER SPECIMENS: COSTA RICA: Alajuela: From Palmira to Pueblo Nuevo, 2030 m, 12 VII 1983, *Escobar 2770*, SEL! Poas-Varablanca, km 3, 9 XI 1982, *Hágsater 6798*, AMO! Region de Zarcero, Palmira, 27 IX 1937, *Smith 458*, SEL! Ibid. 2200 m, 10 VIII 1938, *Smith 1092*, AMES! Ibid. 2200 m, 2 IX 1938, *Smith 1163*, AMES! **Cartago:** Cordillera de Talamanca, Salsipuedes, 2700 m, 22 II 1983, *Hágsater 6947*, AMO! (Illustration voucher) INB! MEXU! **Heredia:** Parque Nac. Braulio Carrillo, Sendero Cerro Guararí, 2600 m, 9 X 1989, *Rivera 125*, INB! Cerros de Zurqui, northeast of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50673*, US! Ibid. *Standley 50726*, AMES! US! El Gallito, 1900 m, 30 X 1938, *Valerio 2665*, AMES! **San José:** Z.P. Cerros de Escazú, Cerros Escazú-La Carpintera, en la cima falda norte del Alto Hierbabuena (Cerro Daser) en la vereda a la Quebrada Suárez, 2000-2300 m, 3 X 1993, *Morales 1838*, AMO! Cerro Daser (Cerros de Escazú), 2500 m, 11 VIII 1983, *Pérez 693*, F! Reserva Forestal Madre Selva, 2750 m, 1 VII 1988, *Sánchez 23*, USJ! Zurqui, 2000-2500 m, 13 II 1926, *Standley 48245*, AMES! US! **PANAMÁ: Chiriquí:** Above Guadalupe, 27 X 1976, *Butcher s.n.*, AMO!

DISTRIBUTION AND ECOLOGY: Known from the higher reaches of the Cordillera Central and the Fila del Cedral in Costa Rica and the area around the Volcán Barú in western Panama. Epiphyte, from 1900 to 2750 m altitude. Flowering from August to February. Fruting in March.

RECOGNITION: *Epidendrum cordiforme* C. Schweinf., belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by the small, tree like habit, its thin, terete stems, 1.2 mm thick, flowers 1 or rarely 2, cream colored tinged with purple, the lip semiorbicular-cordiform and apiculate. It is very similar to *Epidendrum elcimeyae* Hágsater & García-Cruz from lower altitude (1350 m), which has ancipitose stems, 2-3 yellowish-green flowers, sepals narrowly lanceolate, 3-veined, petals narrowly oblong, 3-veined, and the lip triangular-cordate with a tridentate callus. *Epidendrum microcardium* Schltr. has 30 cm tall plants, terete stems, 5-10 small flowers, and sepals and petals linear, 3-veined, 4 mm long. *Epidendrum microdendron* Rchb.f. has ancipitose stems, longer leaves and a 3-lobed lip.

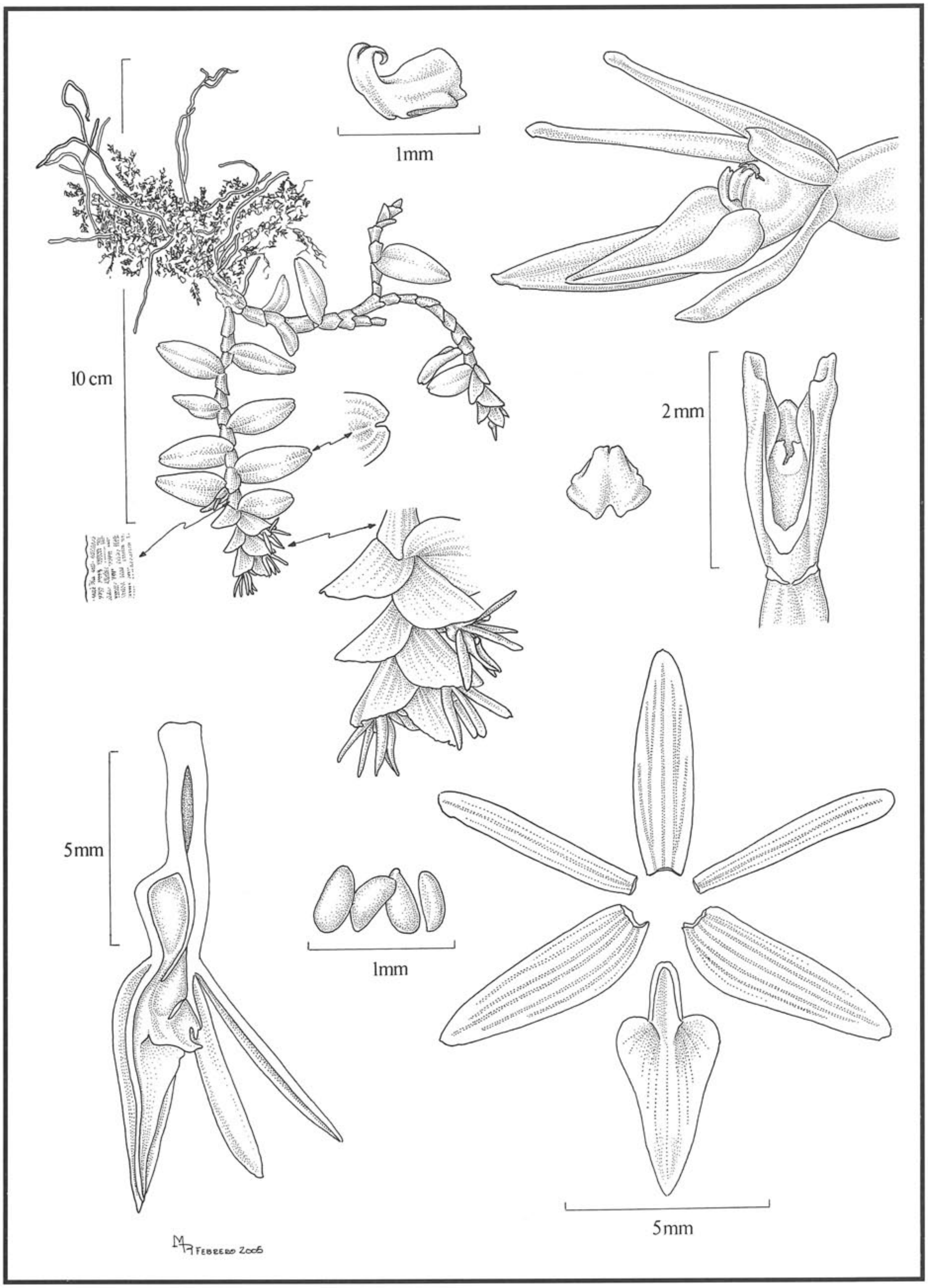


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *cordi*, from *cordatus*, having two equal more or less rounded lobes at the base and *forme*, shape, in reference to the heart-shaped lip.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM CORNANTHERA F.Lehm. & Kraenzl. **Plate 923**

EPIDENDRUM CORNANTHERA F.Lehm. & Kraenzl., Engl. Bot. Jahrb. 26: 463. 1899.

Type: COLOMBIA: [Valle del Cauca:] In declivitatibus circa Playa Larga ad flavium Dagua, et in silvis densis Buenaventurae, 0-300 m, ***F. C. Lehmann 8341.*** Holotype: K! (label indicates "East Andes of Loxa").

Hierba epífita, colgante, monopodial, ramificada, 5-13 cm de alto. **Raíces** basales, de 1 mm de grosor. **Tallos** tipo caña, ramificados de los entrenudos subapicales, 3-10 cm de largo, las ramas más cortas, 2-4 cm de largo. **Hojas** 5-10, distribuidas a lo largo del tallo, vainas tubulares, lateralmente comprimidas, rugosas, las del tallo principal 3-5 mm de largo, las de las ramas 2-3 mm de largo; láminas articuladas, ovado elípticas, desigualmente bilobadas, fuertemente carinadas, 1-2 × 0.4-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, se produce en cualquiera de las ramificaciones, racemosa, dística; pedúnculo muy reducido. **Brácteas florales** envolventes, imbricadas, anchamente ovadas a elípticas, obtusas, más largas que los ovarios, 0.5-0.8 cm de largo. **Ovario** terete, con una vesícula ventral detrás del perianto, 0.5-0.7 cm de largo. **Flores** 2-6, simultáneas, no resupinadas, verde amarillentas. **Sépalos** entreabiertos, libres, lanceolados, agudos, margen entero, 5-6 × 1.2-2 mm, el dorsal 3-nervado, las nervaduras laterales ramificadas, los laterales ligeramente oblicuos, 5-nervados, las nervaduras laterales bifurcadas en la base por lo que parecen 7-nervados. **Pétalos** entreabiertos, libres, lineares, agudos, 3-nervados, margen entero, 4-5 × 1.5-2.2 mm. **Labelo** unido a la columna, entero, triangular, cordado en la base, agudo, los lados abrazando a la columna sin cubrirla, 4-4.4 × 3.5-4 mm, callo único, laminar, formando dos cavidades basales, ocasionalmente ligeramente engrosado, dando la apariencia de tres quillas en el disco del labelo. **Columna** corta, recta, obcónica, gruesa, con un par de dientes laterales, apicales, incurvados, 2-3 mm de largo. **Clinandrio** corto, entero. **Antera** obcónica, con un par de cuernos elongados, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos; caudículas cortas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, en la base de la columna, de la mitad de la longitud de la cavidad estigmática. **Nectario** penetrando 1/2 de la longitud del ovario, inflado detrás del perianto, no ornamentado. **Cápsula** no vista.

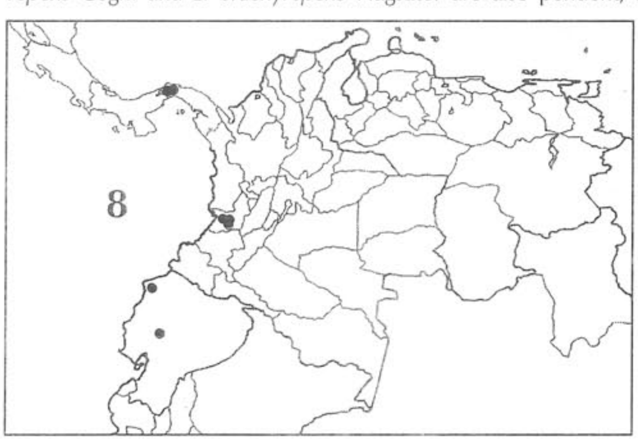
Epiphytic, pendent, monopodial, branching **herb. Roots** basal, thin. **Stems** cane-like, short, branching from the subapical internodes. **Leaves** 5-10, distributed throughout the stems; sheaths tubular, laterally compressed; blade articulate, ovate-elliptic, unequally bilobed, strongly carinate. **Inflorescence** apical, produced from any stem, racemose, distichous. **Floral bracts** amplexicaul, imbricating, widely ovate to elliptic, obtuse, longer than the ovary. **Ovary** terete, with a central vesicle behind the perianth. **Flowers** 2-6, simultaneous, non-resupinate, yellowish-green. **Sepals** partly spreading, free, lanceolate, acute, margin entire, the dorsal sepal 3-veined, the lateral veins branching, the lateral sepals slightly oblique, 5-veined, with the lateral veins bifurcate at the base and thus appearing 7-veined. **Petals** partly spreading, free, linear, acute, 3-veined, margin entire. **Lip** united to the column, entire, triangular, base cordate, acute, the sides embracing the column without covering it; callus single, laminar, forming a cavity on each side. **Column** straight, thick, with a pair of lateral, incurved teeth at the apex. **Clinandrium-hood** short, entire. **Anther** ending in a pair of involute, petaloid horns, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed, caudicles short. **Rostellum** apical, slit. **Nectary** penetrating half the ovary, inflated behind the perianth, smooth.

DISTRIBUTION AND ECOLOGY: Known from the Atlantic slope of eastern Panama, and the Pacific slope of Colombia and Ecuador. Epiphytic, from sea level to 650 m altitude. Flowering from March to December.

OTHER SPECIMENS: PANAMA: Panama: Río Pequení, 10-15 minutes upstream from hydrographic station by motor, 10 XII 1974, *Dressler 4868*, AMO! (Illustration voucher) El Llano-Cartí road, 23.4 km from Inter-American Hwy, 13 IV 1974, *Mori 5563*, MO! **COLOMBIA: Valle del Cauca:** below Queremal km 65, 650 m, *Folsom 10474,* AMO! x2 (Illustration, AMO!) **ECUADOR: Esmeraldas:** Km 122 Santo Domingo-Esmeraldas, 100 m, 13 IX 1980, *Dodson 10404*, SEL! (pro parte) 8 km east of El Muisne, on road to Esmeraldes, 50 m, 17 VIII 1986, *Dodson 16592*, RPSC! **Los Ríos:** Río Palenque Biological Station, km 56 Quevedo-Santo Domingo, 50-220 m, 1 III 1975, *Dodson 5969,* AMO! MO! SEL! **Pichincha:** Finca Carlita, at km 13 on road Santo Domingo de los Colorados-Chone, 550 m, 10 VI 1973, *Holm-Nielsen 7026*, AAU! 18 km below Santo Domingo, on road Chone, 8 III 1975, *Luer 310,* SEL! Quevedo Santo-Domingo Road, 1 km north of Luz de America, 1400 ft, *Saulëda 3815*, AAU! AMES! FLAS! L! MO! NY! SEL! U! WIS!

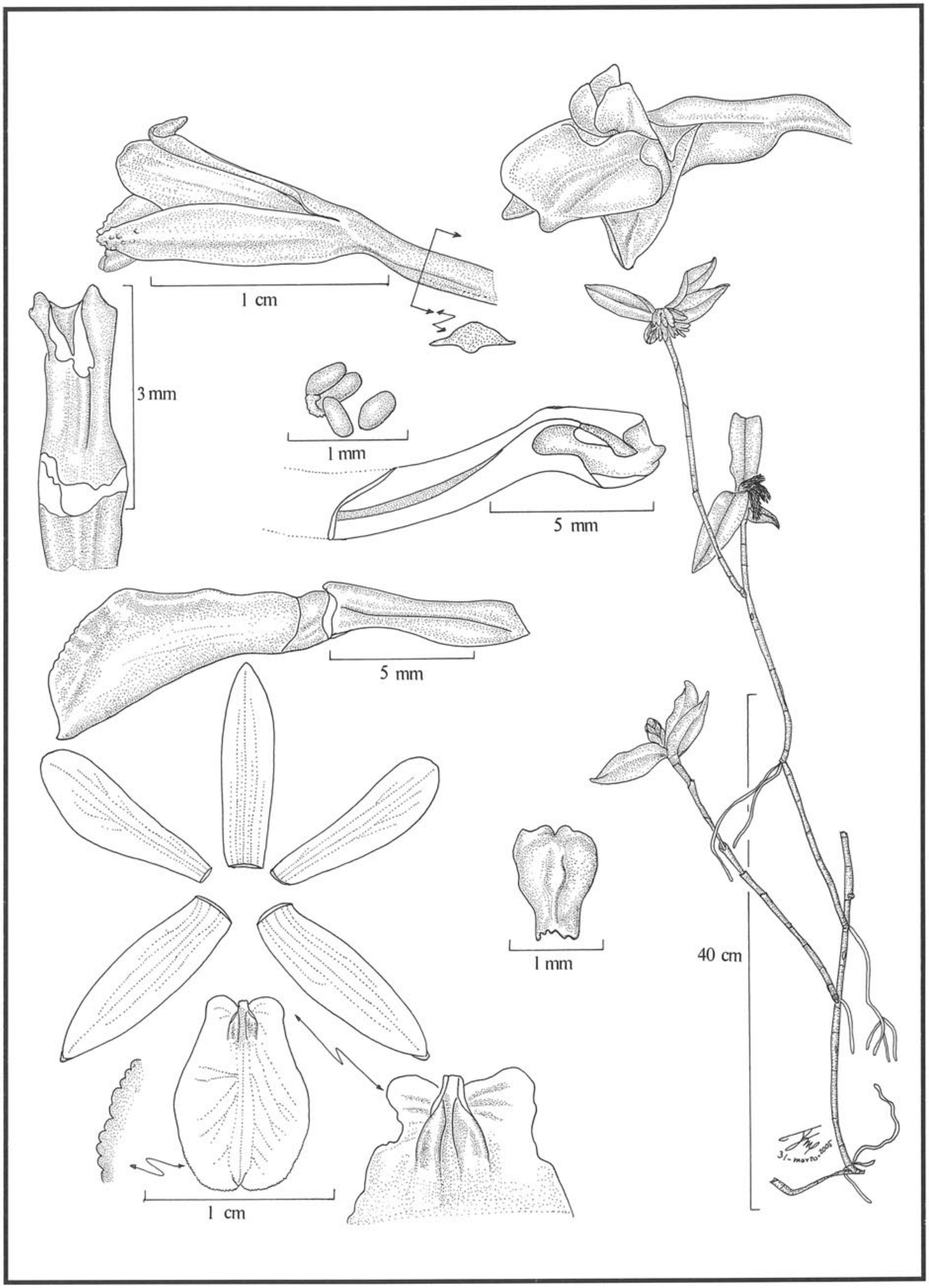
OTHER RECORDS: COLOMBIA: Valle del Cauca: Carr. Cali-Buenaventura, km 52, entre Anchicayá y Buenaventura, después de las cascadas, casa de Ernesto, 250 m, 27 IV 1983, *Hágsater 7398*, flowers in spirit AMO!

RECOGNITION: *Epidendrum cornanthera* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Repens Subgroup, which has strictly pendent plants, with small leaves less than 2.5 cm long. The species is recognized by the small, pendent plants, leaves distributed throughout the stems, strongly carinate, 1-2 cm long, the 2-6 flowered inflorescence, triangular lip and the ovary forming a vesicle behind the perianth, the column with a pair of incurved apical teeth, and the anther two-horned, the sepals acute. It is very similar to *E. exiguum* Ames & C.Schweinf. which is found along the Atlantic slope in western Costa Rica at 650-900 m altitude, and has shorter leaves, to 1 cm long, 2-3 flowers and acuminate lateral sepals. *Epidendrum repens* Cogn. and *E. brachyrepens* Hágsater are also pendent, but the plants are much longer, the inflorescence single-flowered, the column does not have apical teeth, and the anther lacks the apical horns. *Epidendrum luckei* Bock has longer stems, pale green flowers, ovate-elliptic leaves, calli three dentate, the middle longer than the lateral teeth.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *cornu*, horn, and the Greek ανθηρα, anther, in reference to the apical processes of the anther which appear like a pair of horns.



EPIDENDRUM CRYPTANTHUM L.O.Williams

Plate 924

EPIDENDRUM CRYPTANTHUM L.O.Williams, Amer. Orch. Soc. Bull. 11: 249. 1942.

Type: PANAMA: Coclé: Hills north of El Valle de Antón, 800-1000 m, 21 November 1942, ***Paul H. Allen* 2262.** Holotype: AMES!

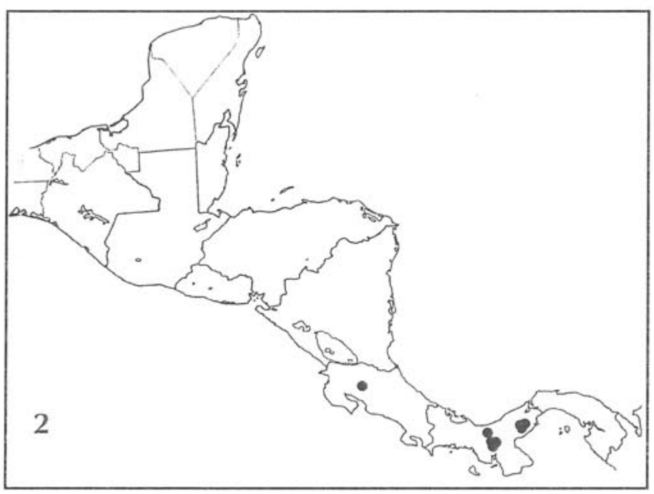
Hierba epífita, de simpodio rastrero, escandente, de crecimiento sucesivo lateral; ca. 24 cm de alto. **Raíces** distribuidas a lo largo de los entrenudos basales, escasas, delgadas; 1.0-1.6 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, ligeramente arqueados; 19-22 x 0.2-0.4 cm; cubiertos casi en su totalidad por vainas tubulares, algo dilatadas en el ápice, escariosas, fibrosas con el tiempo; 8-35 mm de largo. **Hojas** 2-4, agrupadas en el ápice del tallo, alternas, articuladas, coriáceas; vainas tubulares, ligeramente infladas en el ápice, finamente estriadas, 6-17 mm de largo; lámina elíptica a ovado elíptica, aguda, con una quilla dorsal baja, margen entero, 4-10 x 1.7-3.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, arqueada, florece una sola vez, paniculada, produciendo de 1 a 3 racimos simultáneos muy cortos, densos, no evidentes, oculta casi totalmente por las brácteas del pedúnculo; 2-3 cm de largo; pedúnculo y raquis ocultos totalmente por múltiples brácteas. **Brácteas florales** mucho más largas que el ovario (casi tan largas como la flor), ovadas a ovado oblongas, subagudas, conduplicadas, glumáceas, margen apical ligeramente eroso, 10-13 mm de largo. **Flores** ca. 5, sucesivas, ocultas casi totalmente por las brácteas florales, sépalos y pétalos blanco cremosos; sin datos de fragancia. **Ovario** corto, terete, delgado, no inflado, no ornamentado, 6 mm de largo. **Sépalos** libres, entreabiertos, glabros, margen extendido, entero, 9-11.5 x 3-4 mm; el **dorsal** oblongo elíptico, redondeado, 3-nervado, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados; los **laterales** elípticos, subagudos, 5-nervados, con una quilla dorsal baja, con diminutas papilas en el ápice de la superficie dorsal. **Pétalos** libres, entreabiertos, espatulados, redondeados, 3-nervados, las nervaduras laterales con múltiples ramificaciones cortas bifurcadas en el ápice, margen apical ligeramente ondulado, 10-11 x 3-4 mm. **Labelo** unido a la columna, entero, obovado pandurado, cordado en la base, ápice obtuso, con un apículo diminuto, margenes laterales ligeramente involutos en posición natural, crenado, 10 x 8 mm; con un par de callos laminares, bajos, divergentes, disco con una quilla carnosa que se alarga hasta el seno apical. **Columna** recta, corta, gruesa, 2.5-3 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, ovoides; caudículas suaves y granulosas, más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando cerca de ½ de la cavidad estigmática. **Nectario** poco profundo, sin penetrar el ovario, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, scandent **herb**, with succesive lateral growths. **Roots** distributed along the basal internodes, scarce, thin. **Stems** simple, cane-like, terete, thin, slightly arcuate, covered nearly totally by tubular sheaths, the sheaths somewhat dilated towards the apex, scarious, fibrous with time. **Leaves** 2-4, aggregated towards the apex of the stems, alternate, articulate, coriaceous; sheaths tubular, slightly inflated towards the apex, minutely striated; blade elliptic to ovate-elliptic, acute, with a low dorsal keel, margin entire. **Inflorescence** apical, arcuate, paniculate, producing 1-3 dense, racemes, distichous, flowering only once, arcuate, short, compact, nearly totally hidden within the bracts of the peduncle. **Floral bracts** much longer than the ovary (nearly as long as the flower), ovate to ovate-oblong, subacute, conduplicate, glumaceous, apical margin somewhat erose. **Flowers** ca. 5, successive, nearly totally hidden by the floral bracts, sepals and petals creamy white. **Ovary** short, terete, thin, smooth, not inflated. **Sepals** free, partly spreading, glabrous, margin spreading, entire; the dorsal sepal oblong-elliptic, rounded, 3-veined, the lateral veins branching from the base so as to appear 5-veined; the lateral sepals elliptic, subacute, 5-veined, with a low dorsal keel, with minute papillae on the apical dorsal surface. **Petals** free, partly spreading, spatulate, rounded, 3-veined, the lateral veins many-branched and bifurcated towards the apex, apical margin slightly undulate. **Lip** united to the column, entire, obovate-pandurate, base cordate, apex obtuse, with a minute apicule, lateral margins involute, crenate; bicallose, a pair of low, laminar, divergent calli, disc with a fleshy elongate keel reaching the apical sinus. **Column** straight, short, thick. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, ovoid; caudicles soft and granulose, shorther than the pollinia. **Rostellum** apical, slit. **Nectary** short, not penetrating the ovary, wide, not inflated, smooth.

OTHER RECORDS: COSTA RICA: Alajuela: La Palma de San Ramón, 1350 m, 6 VIII 1924, *Brenes 2264*, CR! **PANAMÁ: Coclé:** Hills above Valle de Antón, 25 XI 1967, *Dressler 3188*, Herb. Dressler! Cerro Pilón, above El Valle de Antón, 2000 ft, 27 III 1969, *Porter 4453*, MO! **Veraguas:** Santa Fé, Cerro Tute, 2500 ft, 25 III 1947, *Allen 4365*, G! Río Calovebora, 750 m, 3 IV 1976, *Croat 33842*, MO! (Illustration voucher) N of Santa Fé, 4 IX 1976, *Dressler 5430*, AMO x2!

DISTRIBUTION AND ECOLOGY: Ranging from central Costa Rica (Alajuela) to central Panama, along the Atlantic slope of the continental divide. Epiphyte at 600-800[1350] m altitude. Flowering November to March.

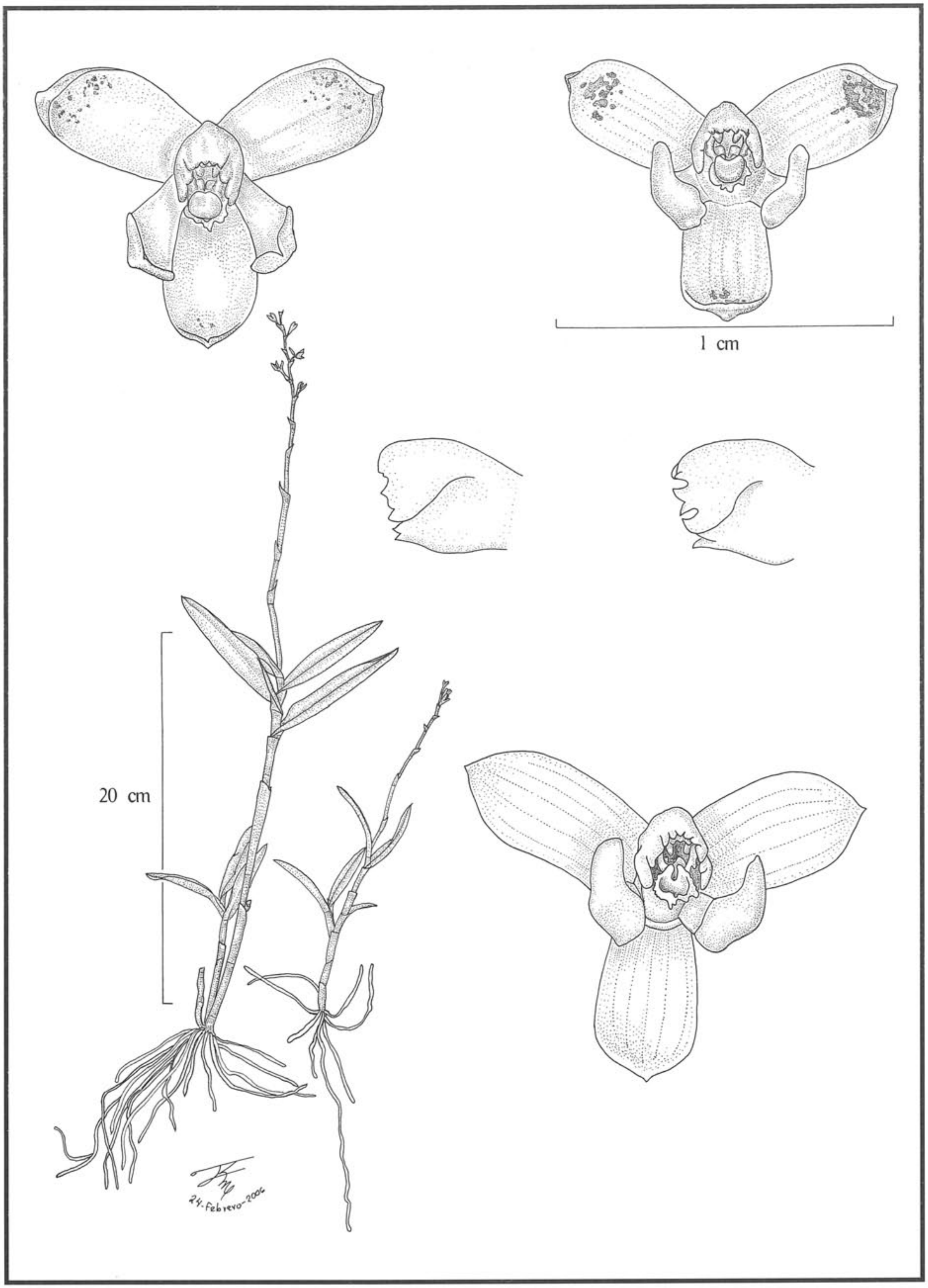
RECOGNITION: *Epidendrum cryptanthum* belongs to the Polychlamys Group, Polychlamys Subgroup which is characterized by the successive lateral growths, the distichous, apical inflorescence with prominent, conduplicate, acute, glumaceous floral bracts. The species is distinguished by the short, compact, paniculate inflorescence, composed of 1-3 racemes (a feature which is not evident from the compact inflorescence, especially in pressed specimens), flowers creamy white totally hidden within the imbricating glumaceous bracts, sepals free, 9-11.5 mm long, lip obovate-pandurate with the lateral margins involute, and the thin ovary, not inflated. It has been confused with *Epidendrum salpichlamys* Hágsater & E.Santiago which has narrower leaves (less than 17 mm wide), a simple, sessile, compact, racemose inflorescence, imbricating floral bracts, the trumpet-shaped, greenish yellow flowers, with the sepals basally connate and abruptly reflexed above the middle, the oblong lip and the thin, non-inflated ovary. *Epidendrum estrellense* Ames has an elongate inflorescence (5 cm long) with 7 imbricating bracts covering the peduncle, greenish yellow to green flowers of similar size (sepals 10 mm long), the lip is suborbicular-cordate, conduplicate in natural position, and the ovary does not form a vesicle.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, κριπτοσ covered, hidden, and ανθοσ, flower, in reference to the flowers hidden within the imbricating bracts of the inflorescence.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CUNEATOIDES Dodson ex Hágsater **Plate 925**

EPIDENDRUM CUNEATOIDES Dodson ex Hágsater, Orquídea (Mexico City) 13(1-2): 217. 1993.

Basionym: *Neowilliamsia cuneata* Dressler, Orquídea (Mexico City) 9(1): 24. 1983; *non Epidendrum cuneatum* Schltr.

Type: PANAMA: Veraguas, pico de Cerro Arizona, arriba de la Escuela Alto de Piedra, oeste de Santa Fé, 1300 m, 5 Junio 1982, ***Robert L. Dressler 6066***. Holotype: US Isotypes: F! (Illustration voucher) MO PMA SEL

Hierba epífita, simpodial, cespitosa a escandente, 20-38 cm de alto (incluyendo la inflorescencia). **Raíces** basales, delgadas, blancas, 0.7-1 mm de grosor. **Tallos** sencillos, producidos desde la base del tallo anterior o cerca de 6 cm arriba de la base del tallo viejo, tipo caña, teretes en la base y lateralmente aplanados arriba, delgados, erectos, 9-20 cm de largo; cubiertos hacia la base por vainas tubulares, no foliáceas, 1.3-3.3 cm de largo. **Hojas** 2-6, alternas, articuladas; vaina tubular, lateralmente aplanada; lámina elíptica a lanceolado-elíptica, aguda, 3-8 x 0.4-1.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa a incipientemente paniculada (con una rama), pauciflora, laxa, 9-18 cm de largo; pedúnculo lateralmente aplanado, 6-13 cm de largo, provisto de 3-5 brácteas, infundibuliformes, conduplicadas, 4-14 mm de largo; raquis lateralmente aplanado. **Brácteas florales** más cortas que el ovario, anchamente triangulares, conduplicadas, agudas, 2.5-3.5 mm de largo. **Ovario** delgado, 5-8 mm de largo. **Flores** 8-10, dísticas, no resupinadas, pequeñas, llamativas, sépalos verdes, teñidos con morado en la superficie dorsal, blancos ventralmente con algunas manchas moradas cerca del ápice, pétalos y labelo blancos o con algunas manchitas moradas, callo, rostelo y clinandrio amarillo anaranjado; sin datos de fragancia. **Sépalos** extendidos, libres, obovados, diminutamente apiculados, 5-nervados, margen extendido, entero, 5-5.5 x 2.5-2.9 mm. **Pétalos** entreabiertos, libres, espatulados, truncados, margen extendido, entero, 4.5-4.6 x 2.5-2.8 mm. **Labelo** unido a la columna, ligeramente 3-lobado, de forma general obdeltoide-flabeliforme, truncado, 3.8 x 3.8-4 mm; bicalloso, los callos alargados, redondeados; lóbulos laterales con el margen apical muy variable, desde crenado o dentado hasta profundamente y desigualmente 2-3 digitado, 1.5 mm de ancho; lóbulo medio subcuadrado, truncado, muy carnoso, ocasionalmente con tres venas engrosadas, bajas y romas, 1 mm de ancho. **Columna** corta, con una joroba incipiente arriba, 3 mm de largo. **Clinandrio** ligeramente alargado, petaloide, 3-4 lobado. **Antera** 2-locular, suborbicular, con un pico triangular apical. **Polinios** 2, obovoides, lateralmente comprimidos; caudículas 2, laminares, duras, hialinas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, sympodial, caespitose to scandent **herb**. **Stems** simple, produced at or above the base of the previous stem, cane-like, terete at the base, laterally compressed above, thin, erect; covered towards the base by tubular, non-foliaceous sheaths. **Leaves** 2-6, alternate, articulate; sheath tubular, laterally compressed; blade elliptic to elliptic-lanceolate, acute. **Inflorescence** apical, flowering only once, racemose to 1-branched; peduncle laterally compressed, provided with 3-5 infundibuliform, conduplicate bracts; rachis laterally compressed. **Floral bracts** much shorter than the ovary, widely triangular, conduplicate, acute. **Flowers** 8-10, distichous, non-resupinate, small, sepals green flushed with purple without, within white with a few purple spots near the apex; petals and lip white, sometimes with a few purple specks, callus, rostellum and clinandrium-hood orange-yellow. **Sepals** spreading, free, obovate, minutely apiculate, 5-veined, margin spreading, entire. **Petals** partly spreading, free, spatulate, truncate, margin spreading, entire. **Lip** united to the column, slightly 3-lobed, obdeltoid-flabelliform in outline; bicallose, the calli elongate, rounded; lateral lobes with the margin from crenate to dentate to deeply and unequally 2-3-digitate; midlobe subquadrate, truncate, very fleshy, may have 3 low, rounded veins above. **Column** short, with a slight hump above. **Clinandrium-hood** somewhat long, petaloid, 3-4-lobed. **Anther** suborbicular, 2-celled, with a thin, triangular beak. **Pollinia** 2, obovoid, laterally compressed; caudicles 2, laminar, hard, hyaline.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Endemic to central Panama, on the continental divide, epiphytic, at 1300 m altitude. Flowering in June.

RECOGNITION: *Epidendrum cuneatoides* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, usually non-resupinate flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar caudicles. The species is recognized by the short stems (to 9-20 cm tall) with a elongate inflorescence, small, white flowers with purple spots on near the apex of the floral segments, a petaloid clinandrium-hood, and 2 pollinia. *Epidendrum wercklei* Schltr. has taller plants (40-85 cm tall), a very showy, may-flowered, paniculate inflorescence, the flowers white to greenish creamy with brown-purple spots, and a clearly 3-lobed, triangular-flabellate lip. *Epidendrum dwyeri* Hágsater also has taller plants (50-80 cm tall) and a paniculate inflorescence with 1-3 short racemes, chocolate-brown to orange flowers with transverse purple-brown bars, and a subentire lip with 2 laminar keels.

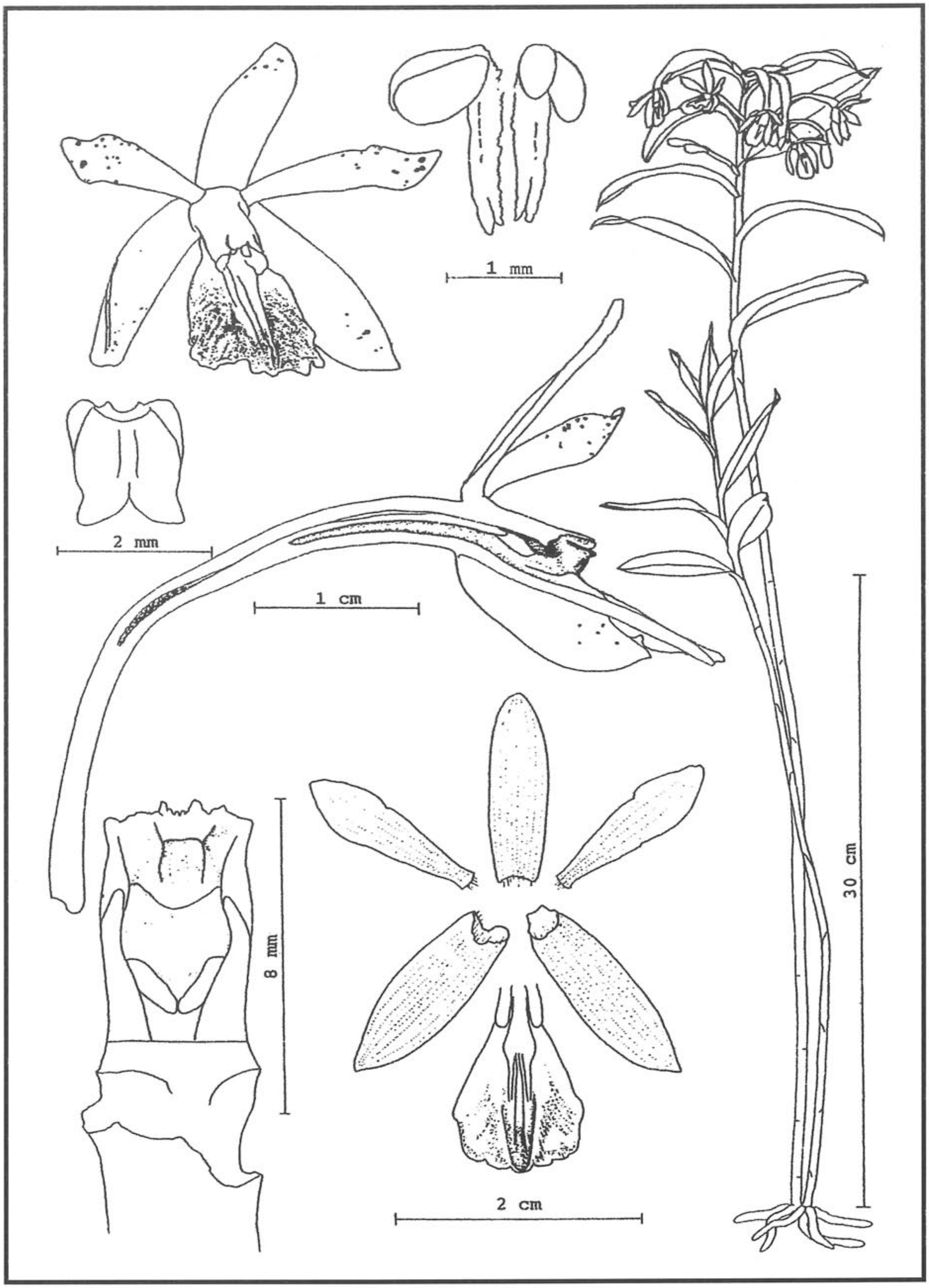


CONSERVATION STATUS: DD. Data deficient. Only known from the type.

ETYMOLOGY: From the Latin *cuneatus* wedge-shaped, and the suffix οειδης, resembling, in reference to the cuneate-spatulate shape of the petals.

REFERENCES: Dressler, R. L., 1981, **El género Neowilliamsia** Garay, Orquídea (Méx.) 8(1): 27-36. Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 84. Hágsater, E., 1993, **New Combinations in *Encyclia* and *Epidendrum***, Orquídea (Méx.) 13(1-2): 217. 1993.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CUNEATUM Schltr. **Plate 926**

EPIDENDRUM CUNEATUM Schltr., Repert. Spec. Nov. Regni Veg. 10(81): 456. 1912.

Type: BOLIVIA: Bei Espiritu Santo, [Río] Antahuacana, ca. 750 m, June 1909, ***Otto Buchtien s.n.*** Holotype: B, destroyed. Lectotype: [here designated] illustration, in Mansfeld, R., Repert. Spec. Nov. Regni. Veg. Beih. 58: tafel 41, Nr. 164. 1930. Synonyms: *Oerstedella vasquezii* Dodson, Icon. Pl. Trop. 6: pl. 563. 1982. Type: BOLIVIA: Cochabamba: Mpio. Chaparé, km 90 Cochabamba-Villa Tunari, 1800 m, 6 December 1978, ***R. Vásquez Ch. 80***. Holotype: SEL 36072! Isotypes: LPB! (Digital image, AMO!) SEL 53394! *Oerstedella thurstoniorum* Dodson & Hágsater, Orquideología 17(3): 139. 1988, [as *"thurstonorum"*]. Type: ECUADOR: Hacienda San Antonio Barón von Humboldt, 2.5 km al norte de Mera, en la carretera de Baños a Puyo, 1050-1300 m, 27 February 1985, ***Calaway H. Dodson et al. 15605***. Holotype: QCNE! Isotype: MO! RPSC! Not *Epidendrum thurstoniorum* Hágsater, Icon. Orch. (Mexico City) 3: pl. 386. 1999 [as *"thurstonorum"*], a member of the *E. difforme* group.

Hierba epífita o terrestre, cespitosa, simpodial; de 30 a 130 cm de alto. **Raíces** basales, carnosas, gruesas; 3.5-6 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos; 30-130 x 0.4-0.8 cm; cubiertos en su totalidad por vainas tubulares verrugosas, las inferiores no foliáceas. **Hojas** 7-12, distribuidas en el tercio apical del tallo, alternas, articuladas, erecto extendidas; vainas tubulares, verrugosas; 13-45 x 4-8 mm; lámina elíptica, aguda, subcoriácea, lisa, verde, margen entero; 6-12 x 1.4-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencias** apical y laterales, (cerca del ápice del tallo) la apical incipientemente paniculada, las laterales racemosas, paucifloras, laxas; 7-10 cm de largo; pedúnculo corto, terete, delgado, recto; 1-3 cm de largo; provisto de 1 a 3 brácteas tubulares, amplexicaules, 5-7 mm de largo; raquis terete, delgado, fractiflexo; 3-5 mm de largo. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas, amplexicaules; 5-12 mm de largo. **Ovario** terete, delgado, liso, no inflado; 25-45 mm de largo. **Flores** 3-5 por racimo, simultáneas, resupinadas; sépalos y pétalos verdes, con puntos o manchas morado o marrón; labelo blanco teñido de púrpura; callos amarillos; sin fragancia. **Sépalos** entreabiertos, libres, carnosos, angostamente elípticos, ápice redondeado a subagudo, 9-nervados, margen entero; 15-17 x 5-6 mm. **Pétalos** entreabiertos, libres, oblanceolados, subagudos, 3-nervados, las nervaduras laterales ramificadas desde la base de manera que parecen 5-nervados, margen entero; 14-17 x 3-4.5 mm. **Labelo** unido a la columna, entero, cuneado obovado, ligeramente convexo, bilobado en el ápice, margen entero a ligeramente ondulado en el ápice; 12-17 x 10-12 mm; bicalloso, los callos paralelos, delgados; disco provisto de 3 quillas, delgadas, lisas, la central alargada hasta el seno apical, el par lateral más corto, prolongado a partir de los callos. **Columna** recta, gruesa, ápice entero o con 4 lóbulos laminares, truncados; 7-8 mm de largo incluyendo el clinandrio. **Clinandrio** corto, bilobado a entero, margen eroso. **Antera** obovoide, con dos dientes carnosos y divergentes en el ápice, 4-locular. **Polinios** 4, obovoides, lateralmente aplanados; caudículas más largas que los polinios, granulosas; sin viscidio. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Lóbulos laterales del estigma** prominentes, casi tan grandes como la cavidad estigmática. **Nectario** poco profundo, penetrando 1/3 del ovario, no inflado, liso. **Cápsula** obovoide-fusiforme, con el perianto persistente; pedicelo delgado, 12 mm de largo; cuerpo 40 x 18 mm; cuello apical 15 mm de largo.

Epiphytic or terrestrial, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, thin, erect, straight; totally covered by verrucose, tubular sheaths, the lowers ones non foliaceous. **Leaves** 7-12, distributed throughout the apical third of the stem, alternate, articulate, erect-spreading; sheaths tubular, verrucose; blade, elliptic, acute, subcoriaceous, smooth, green, margin entire. **Inflorescence** apical and lateral (near the apex of the stem), the apical one slightly paniculate, the lateral ones racemose, few and lax-flowered; peduncle, short, terete, thin, straight, provided with 1-3 tubular bracts; rachis terete, thin, fractiflex. **Floral bracts** much shorter than the ovary, ovate, acute, embracing. **Ovary** terete, thin, smooth, not inflated. **Flowers** 3-5 per raceme, simultaneous, resupinate; sepals and petals green, with purple or brown pots or spots, lip white tinged with purple, calli yellow; without fragrance. **Sepals** partly spreading, free, fleshy, narrowly elliptic, apex rounded to subacute, 9-veined, margin entire. **Petals** partly spreading, free, oblanceolate, subacute, 3-veined, the lateral veins branching from the base so as to appear 5-veined, margin entire. **Lip** united to the column, entire, cuneate-obovate, apex bilobed, margin entire to slightly undulate at the apex; bicallose, the calli parallel, thin, disc provided with 3 thin, smooth keels, the central keel running to the apical sinus, the lateral pair shorter, prolonged from the calli. **Column** straight, thick, apex entire or 4 lobed, the lobes laminar, truncate. **Clinandrium-hood** short, bilobed to entire, margin erose. **Anther** obovoid, with a pair of fleshy, divergent teeth at the apex, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles longer than the pollinia, granulose; viscidium lacking. **Rostellum** perpendicular to the axis of the column, a wide sinus. **Nectary** shallow, penetrating 1/3 of the ovary, not inflated, smooth. **Capsule** obovoid-fusiform, perianth persistent; pedicel thin, apical neck narrow, long.



OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Foothills of the Andes along the Amazon basin, known from central Ecuador to Bolivia. Epiphytic or terrestrial, 650-1800 m altitude. Flowering from November to April, June.

RECOGNITION: *Epidendrum cuneatum* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is perpendicular to the axis of the column instead of parallel, forming a wide, open sinus, and without a viscidium; and the Wallisii Subgroup which has large, fleshy flowers, the lip entire or 3-lobed, the midlobe of the lip bilobed, the clinandrium-hood petaloid, and the pollinia obovoid, laterally compressed, with granulose caudicles. The species is recognized by the greenish sepals and petals, dotted with purple or brown, and the entire, apically bilobed, white lip marked with purple. *Epidendrum misasii* Hágsater from the Chocó in Colombia and north-western Ecuador, and *Epidendrum medinae* from south-western Ecuador have identically colored flowers, but the lip is 3-lobed with distinct lateral lobes in different shape and size; the former has long subquadrate lateral lobes which reach the apex of the midlobe, while the latter has short lateral lobes, which do not reach the apex of the midlobe.

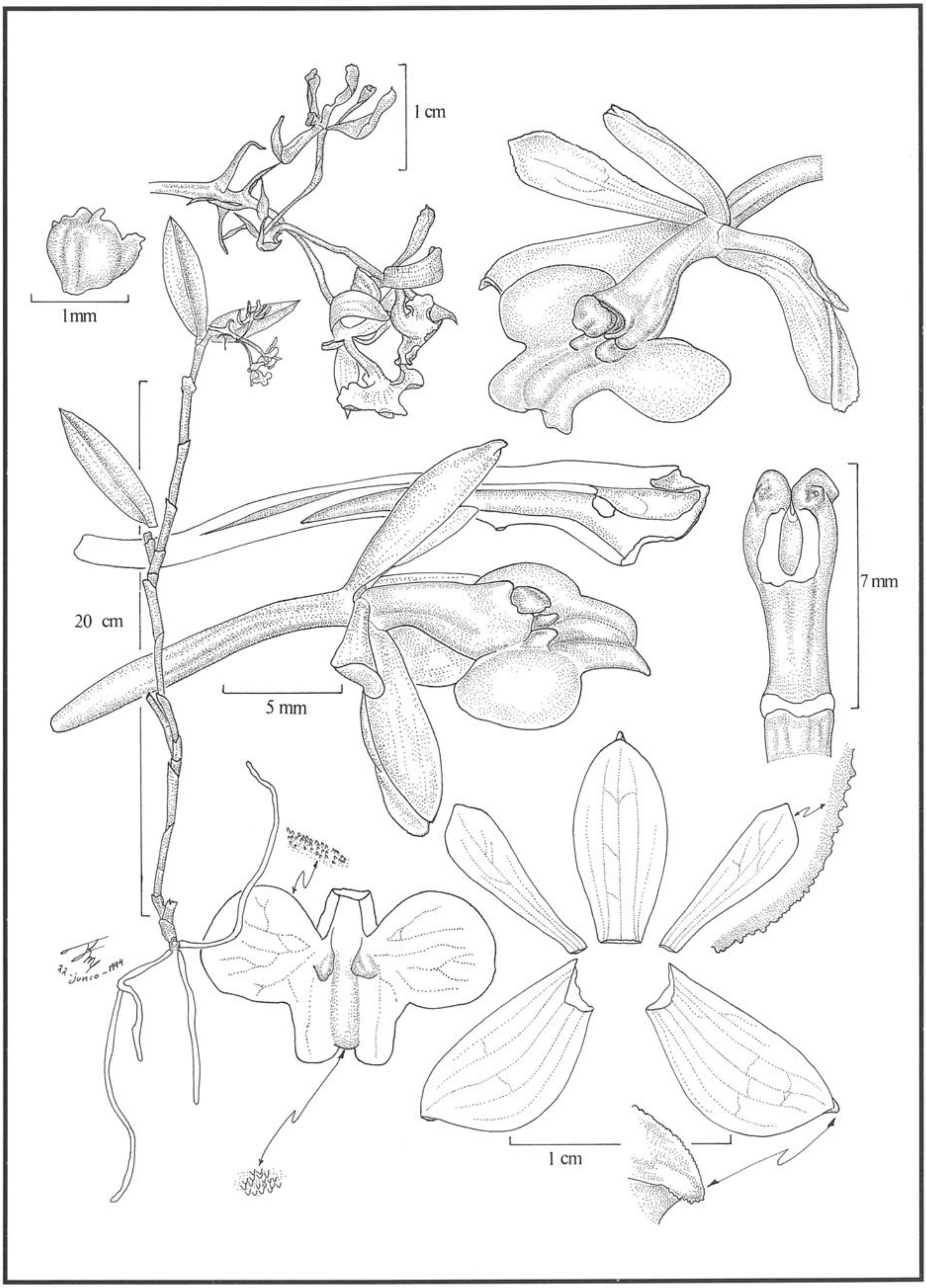
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *cuneatus*, wedge-shaped, in reference to the shape of the lip.

REFERENCES: Dodson, C. H., 2002, as *Oerstedella thurstonorum*, **Native Ecuadorian Orchids**, 3: 637, No. 1445. Hágsater, E., & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. from *Oerstedella* Rchb.f., **Lankesteriana** 5(1): 73. Mansfeld, R., 1930, **Repert. Spec. Nov. Regni Veg. Beih.** 58: t. 41, Nr. 164.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM CURTISII A.D.Hawkes

Plate 927

EPIDENDRUM CURTISII A.D.Hawkes, Orquídea (Rio de Janeiro) 18(5): 170. 1956.

Basionym: *Epidendrum lansbergii* Rchb.f., Nederl. Kruidik. Arch. 4: 316. 1859. Type: Venezuela: Caracas, ***Lansberg s.n.*** Holotype: W 17728! Illustration: W 5695! *Non* Regel 1855.
Synonym: *Epidendrum superpositum* Garay, Bot. Mus. Leafl. 18(5): 203. 1958. Type: Venezuela: Junquito, XII 1957, ***G.C.K. Dunsterville 220.*** Holotype: AMES 68942! Isotype: AMES 116966!

Hierba epífita, de simpodio erecto donde cada tallo nuevo se origina de un entrenudo intermedio subapical del tallo anterior, 15-40 cm de alto. **Raíces** de la base de los tallos inferiores, carnosas, gruesas, ca. 1.5-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 4.5-10 x 0.25-0.4 cm. **Hojas** 2-3, agrupadas hacia el tercio apical del tallo; vaina tubular, finamente estriada, diminutamente rugosa, 1-2.6 cm de largo; lámina articulada, elíptico oblonga, aguda, lisa, margen entero, 3-7 x 0.8-1.8[2.0] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, 2-5 cm de largo; pedúnculo desprovisto de brácteas; raquis liso, lateralmente comprimido. **Brácteas florales** más cortas que el ovario, triangular acuminadas, 3-8 mm de largo. **Flores** 5-15, simultáneas, resupinadas, verdes, ligeramente teñidas de morado, fragancia no registrada. **Ovario** terete, delgado, liso, no inflado, 10-15 mm de largo. **Sépalos** extendidos, libres, elípticos, agudos, margen entero, extendido, quilla dorsal prominente hacia el ápice, la quilla con el margen eroso denticulado, glabros, carnosos; el **dorsal** 5-nervado, 8-10.5 x 3-4.5 mm; los **laterales** algo oblicuos, 5-6-nervados, [8]9-12 x 4-6 mm. **Pétalos** extendidos, oblanceolados, obtusos, 3-nervados, margen eroso denticulado, 8-10.5 x [1.0]2.3-2.5 mm. **Labelo** unido a la columna, trilobado, base cordada, bicalloso, con una carina gruesa, roma llegando hasta el seno apical, 5-9 x 10-14 mm; lóbulos laterales suborbiculares, 5 x 5 mm, lóbulo medio subcuadrado, conspicuamente emarginado con un apículo grueso en el seno, 3 x 4.5 mm. **Columna** ligeramente arqueada en la base, 6-7 mm de largo. **Clinandrio** reducido, carnoso, sin cubrir la antera, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas granulosas más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/5 del largo de la cavidad estigmática. **Nectario** profundo, penetrando la mitad del ovario, liso. **Cápsula** no vista.

Epiphytic **herb**, where the new stem is produced from a subapical internode of the previous stem. **Roots** fleshy, from the base of the lower stems. **Leaves** 2-3, elliptic-oblong, acute; leaf-sheaths finely striated and minutely rugose. **Inflorescence** apical from the mature stem, arching, racemose; rachis laterally compressed. **Floral bracts** triangular acuminate, shorter than the ovary. **Flowers** 5-15, simultaneous, resupinate, green lightly veined and flushed with purple. **Ovary** thin, not inflated, smooth. **Sepals** elliptic, acute, 5-6-veined. **Petals** oblanceolate, obtuse, 3-veined. **Lip** 3-lobed, base cordate, bicallose with a low rounded keel running down the middle to the apical sinus; lateral lobes suborbicular, apical lobe subquadrate, conspicuously emarginate. **Column** slightly arched. **Clinandrium-hood** reduced, fleshy, entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating half of the ovary, smooth.

OTHER SPECIMENS: VENEZUELA: Aragua: Colonia Tovar, 1856, *Fendler 1430*, AMES! W x2! Colonia Tovar, 1900 m, 13 X 1956, *Renz 8737*, RENZ! Junquito-Colonia Tovar , 1800 m, 13 X 1956, *Renz 8740*, RENZ! Colonia Tovar, 2000 m, 23 VIII 1958, *Renz 9141*, RENZ! **Distrito Federal:** El Junquito, *Fernández 26*, G! Silla de Caracas, 1843 m, *Funck 385*, P! (Illustration voucher). El Junquito-Colonia Tovar, 2200 m, 31 VII 1966, *Steyermark 95981*, AMES! US!

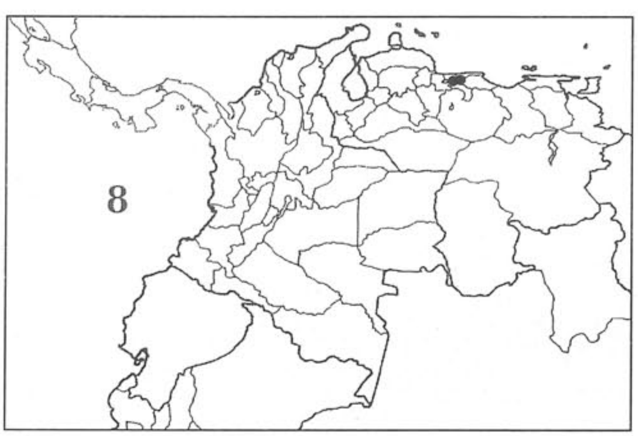
OTHER RECORDS: VENEZUELA: without locality, Fig. 537, E. Foldats, Orchidaceae in *T. Lasser*: **Flora de Venezuela**, 15(3): 415. 1970 **Distrito Federal:** Junquito, VIII 1954, *Dunsterville 220*, Illustration, K! AMES! Published **Ven. Orch. Ill.** 1: 137. 1959.

DISTRIBUTION AND ECOLOGY: Endemic to northern Venezuela, from the Cordillera Costanera, the area around Caracas and west to the state of Aragua, epiphyte at 1800-2200 m. Flowering July to October.

RECOGNITION: *Epidendrum curtisii* belongs to the Arbuscula Group, Incomptum Subgroup which is characterized by the successive lateral growths, few leaves aggregated towards the apex of the stems, arching, apical inflorescence with fleshy green to black flowers, the lip bicallose entire to 3-lobed. The species is recognized by the simultaneous flowers with a thin ovary (not having a prominent ventral nectary which inflates the ovary), the 3-lobed, bicallose lip, the midlobe emarginated, sepals 8-12 mm long, and the oblanceolate, 3-veined petals. *Epidendrum homoion* Hágsater & Dodson is very similar in shape but has much larger flowers, the sepals being 13-15 mm long, the lip 26-28 mm wide, and the petals are much wider, 6.0-6.5 mm. *Epidendrum incomptum* Rchb.f. has larger flowers (sepals 13-16 mm long), narrower, 1-veined petals, and an ecallose lip, the lateral lobes rounded but not orbicular. *Epidendrum carchiense* Hágsater & Dodson and *E. yambalense* Hágsater & Dodson have the midlobe of the lip apiculate. Both *E. envigadoënse* Hágsater and *E. amayense* Hágsater have a bilobed, emarginate midlobe, formed by a pair of semicircular lobes.

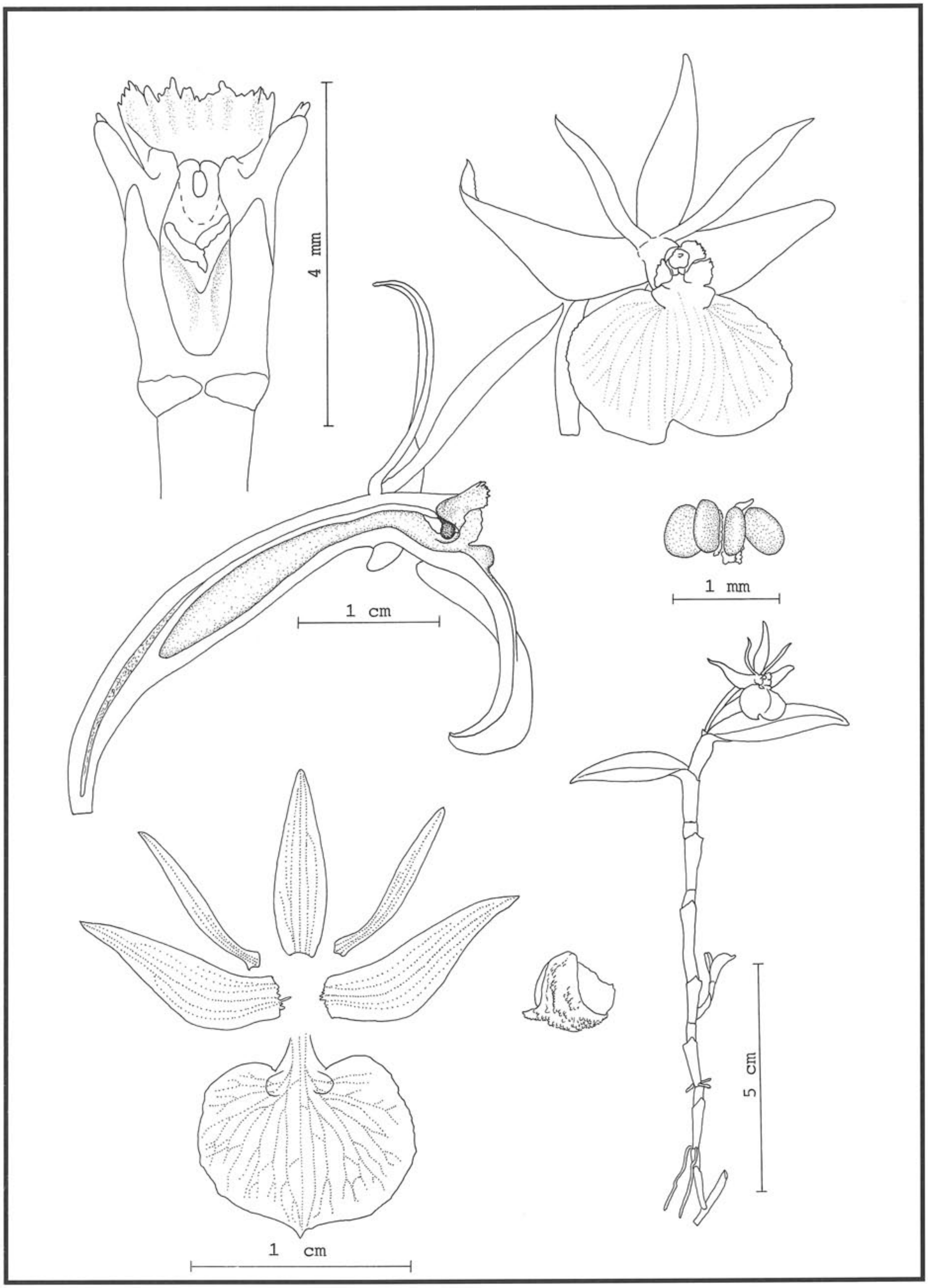
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Charles H. Curtis, [1869-1958] for many years editor of The Orchid Review.



REFERENCES: Dunsterville, G. C. K. & L. A. Garay, 1959. **Ven. Orch. Ill.** 1: 136-137.

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EPIDENDRUM DENTIFERUM Ames & C.Schweinf. **Plate 928**

EPIDENDRUM DENTIFERUM Ames & C.Schweinf., Sched. Orch. 8: 42, 1925.

Type: COSTA RICA: [Cartago:] Pejivalle, 30 May 1924, ***C. H. Lankester 843.*** Holotype: AMES! Synonym: *Epidendrum platychilum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 42. 1923, *non* Schltr. 1921. Type: Costa Rica: [San José:] San Jeronimo [de Moravia], blühend im Mai 1921, ***Wercklé 20.*** Holotype: B (apparently destroyed).

Hierba epífita, simpodial, 7-17 cm de alto incluyendo la inflorescencia. **Raíces** basales y de los kekis que se forman en los nodos superiores de los tallos, carnosas, filiformes, 0.5-0.7 mm de grosor. **Tallo** sencillo, algunas veces creciendo aparentemente rastrero, algo lateralmente comprimido, flexuoso, 4-13 x 0.2-0.4 cm. **Hojas** 4-6, dísticas, equidistantes a lo largo del tallo; vaina algo lateralmente comprimida, lisa, 1-2 cm de largo; lámina angostamente eliptico lanceolada, aguda, lisa, no ornamentada, subcoriácea, verde, carina dorsal ausente, 2.5-7 x 0.4-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa, florece varias veces, subsésil, pedúnculo muy corto, oculto dentro de la hoja apical. **Brácteas florales** mucho más cortas que el ovario, triangular acuminadas, 2-3 mm de largo. **Flores** 1-3, sucesivas, pueden estar abiertas a la vez, verde pálido; fragancia seminal. **Ovario** inflado ventralmente en la mitad apical, terete, liso, 15-20 x 1.5-2 mm. **Sépalos** extendidos, libres, apices recurvados, oblongo lanceolados, acuminados, membranáceos, glabros, 5-nervados, margen entero, extendido, 10-16 x 2-3.2 mm, los laterales oblicuos. **Pétalos** membranáceos, extendidos, lineares, acuminados, 3-nervados, márgen entero, extendido, 10-14 x 1.2-2.3 mm. **Labelo** unido a la columna, entero, suborbicular, algo cordado en la base muy abruptamente mucronado en el ápice, membranáceo, 10-12 x 10-11 mm; bicalloso, los callos pequeños, subglobosos, con tres carinas centrales notables. **Columna** recta, 4.5-5.5 mm de largo, con dos láminas carnosas apicales, laterales, laceradas, formando un embudo junto con el clinandrio. **Clinandrio** prominente, entero, margen denticulado. **Antera** subesférica, con un pico al frente, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del mismo largo de los polinios; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de más de la mitad del largo de la cavidad estigmatica. **Nectario** penetrando más de la mitad del ovario, no ornamentado, inflado, amplio. **Cápsula** subglobosa, cuello apical 6.5 mm de largo, pedúnculo 2.5 mm de largo, cuerpo 20-23 x 12-13 mm.

Epiphytic, sympodial **herb. Roots** basal and from the base of the kekis which form a the upper nodes of the stems, fleshy, filiform, thin. **Stem** simple, sometimes somewhat creeping, stem somewhat laterally flattened, flexuose. **Leaves** 4-6, distichous, distributed throughout the stem; sheats somewhat laterally compressed, smooth; blade narrowly lanceolate-elliptic, acute, smooth, subcoriaceous, green. **Inflorescence** apical, pluriracemose, flowering over several years, subsessil, peduncle reduced. **Flowers** 1-3, successive, but may be open at one time, pale green; fragrance seminal. **Ovary** inflated ventrally along the apical half, smooth. **Sepals** spreading, free, the apices recurved, lanceolate-oblong, acuminate, membranaceous, glabrous, 5-veined, margin entire, spreading; the laterals oblique. **Petals** spreading, linear, acuminate, membranaceous, 3-veined, margin entire, spreading. **Lip** united to the column, entire, suborbicular, base somewhat cordate, apex rounded and aburptly mucronate, membranaceous; bicallose, the calli small, subglobose, with three prominent central keels. **Column** straight, with two lacerate, lateral, apical, fleshy lobes, forming a funnell togetheer with the clinandrium-hood. **Clinandrium-hood** prominent, denticulate. **Anther** subspherical, with a short beak in front, 4-celled. **Pollinia** 4, ovoid, laterally compressed, subequal; caudicles soft and granulose, as long as the pollinia; viscidium viscous, translucent. **Rostellum** apical, slit. **Nectary** penetrating more than half the ovary, smooth, inflated.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Atlantic slope of Costa Rica and Panama from Turrialba to Santa Fé de Veraguas, and along the Pacific watershed of northern South America to the Choco, Colombia; between 500-1090 m altitude. Flowering from March to October.

RECOGNITION: *Epidendrum dentiferum* belongs to the Difforme Group which is recognized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish green rarely white flowers. The species is recognized by the caespitose to creeping plants, somewhat laterally compressed stems, narrowly elliptic-lanceolate leaves, 1-3, light green flowers, membranaceous sepals with the apex recurved, linear petals, the suborbicular lip abruptly mucronate at the apex, the column with two apical, felshy, lacerate wings and the prominent, clinandrium-hood with the margin denticulate, the three forming a funnell. It is distinguished from the very similar *E. jejunum* Rchb.f. which has white to greenish white flowers, rhombic to oblanceolate petals and a cordiform lip. *E. stellidifforme* Hágsater & Dodson, endemic to Ecuador, 1300-1500 m altitude, has larger plants, longer flowers, lanceolate petals, and the lip is acuminate at the apex.

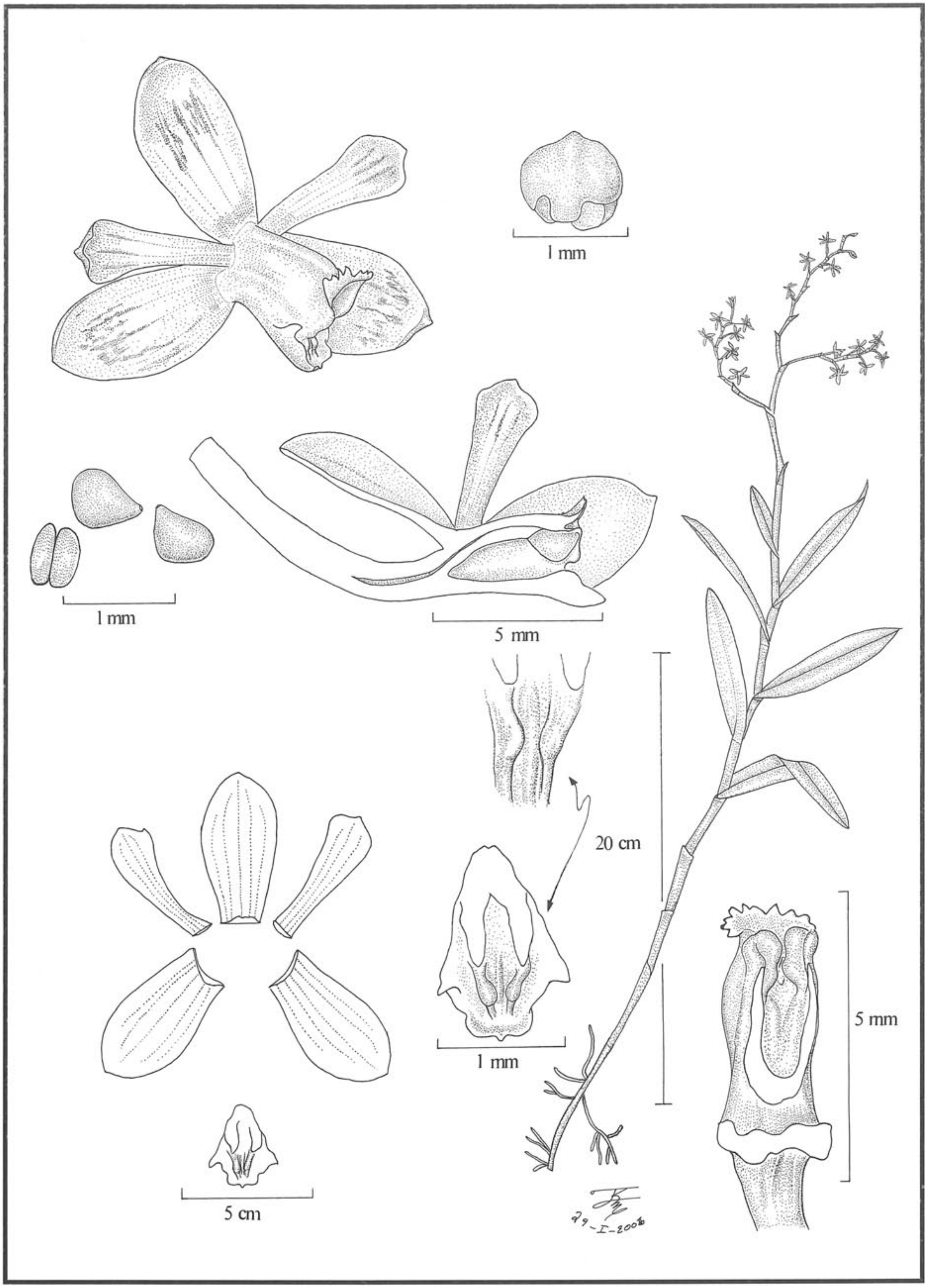
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *dentatus*, toothed, in reference to the dentate apex of the column.



Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM DWYERIOIDES Hágsater & E.Santiago

Plate 929

EPIDENDRUM DWYERIOIDES Hágsater et E.Santiago, *sp. nov.*

Type: PANAMÁ: Bocas del Toro: Changuinola, Sierra Madre, 2200 m, 5 March 2000, Jardín Finca Drácula 483 y 476, ***Erick Olmos & J. Nuñez 202.*** Holotype: AMO! (Illustration voucher.)

Epidendro dwyeri Hágsater simile sed floribus minoribus, labello bicalloso reductissimo duos lobulos laterales triangulares incipientes ferenti, nectario amplo a fronte cavitatis stigmaticae, angusto versus fundum, distinctum.

Hierba epífita, simpodial, escandente, ca. de 37 cm de alto. **Raíces** originándose a lo largo de los entrenudos basales de cada tallo, carnosas, delgadas. 0.5-1 mm de grosor. **Tallos** sencillos, producidos de la parte inferior del tallo anterior, tipo caña, teretes en la base y lateralmente aplanados arriba, delgados, erectos, ligeramente flexuosos, 25 x 2.5-5.5 cm; cubiertos en la base por vainas tubulares no foliáceas, 25 mm de largo. **Hojas** 6, distribuidas en la ½ apical del tallo, alternas, articuladas, las inferiores generalmente caedizas; vaina tubular, finamente estriada, 11-23 x 2.5-5.5 mm; lámina angostamente elíptica, aguda, diminutamente apiculada, margen entero, 3-7 x 0.7-1.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, la panícula compuesta por 3 racimos cortos, pauciflora, laxa, erecta, 12 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, recto, 55 mm de largo, provisto en la parte media de 1 bráctea tubular en la base, conduplicada en el ápice, aguda, 10 mm de largo; raquis lateralmente aplanado, ancipitoso, algo flexuoso. **Brácteas florales** más cortas que el ovario, triangulares, agudas, conduplicadas, amplexicaules, 2-3 mm de largo. **Ovario** terete, delgado, no inflado, liso, 6 mm de largo. **Flores** 20, simultáneas, no resupinadas, sépalos y pétalos amarillo verdosos con manchas marrónes, labelo blanco; sin datos de fragancia. **Sépalos** extendidos, libres, obovados, redondeados, diminutamente apiculados, 5-nervados, margen entero, 5.7 x 3 mm. **Pétalos** extendidos, libres, cuneado espatulados, truncado redondeados, diminutamente apiculados, 3-nervados, margen entero, 5.3 x 1.7 mm. **Labelo** unido a la columna, muy reducido, suborbicular en forma general, subentero, el margen muy irregular; bicalloso, con un par de quillas carnosas, bajas; formando incipientemente un par de lóbulos laterales pequeños, triangulares, 0.8 x 3.5 mm; lóbulo medio transversalmente subrectangular, redondeado, diminutamente apiculado, 1.7 x 4 mm. **Columna** recta, algo engrosada, 4 mm de largo. **Clinandrio** sobrepasando ligeramente el ápice de la columna, margen dentado. **Antera** subreniforme, con una quilla dorsal carnosa, 2-locular. **Polinios** 2, obovoides, lateralmente aplanados; caudículas 2, laminares, duras. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** sin penetrar el perianto, amplio frente a la cavidad estigmática, angosto y agudo a la altura del perianto. **Cápsula** no vista.

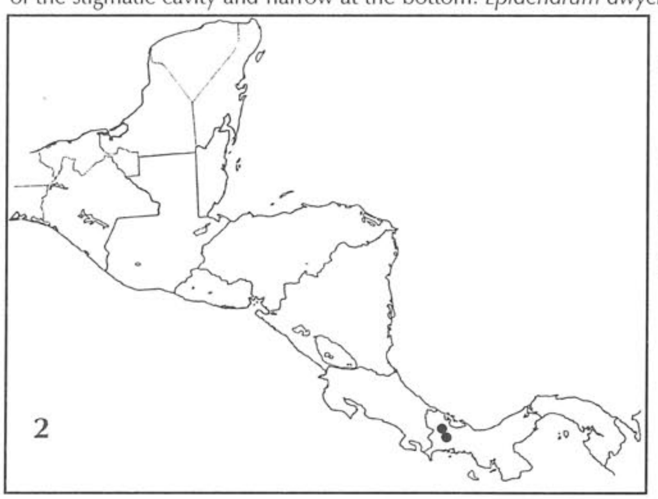
Epiphytic, sympodial scandent **herb. Roots** originating along the basal internodes of each stem, fleshy, thin. **Stems** simple, produced from the lower part of the previous stem, cane-like, terete at the base, laterally compressed above, thin, erect, slightly flexuous; the lower part covered by non-foliaceous, tubular sheaths. **Leaves** 6, distributed along the apical half of the stem, alternate, articulate, the lower ones generally deciduous; sheath tubular, minutely striated; blade narrowly elliptic, acute, minutely apiculate, margin entire. **Inflorescence** apical, flowering only once, paniculate, the panicle formed by 3 short racemes, lax, few-flowered, erect; peduncle laterally compressed, anciptiose, straight, provided in the middle with one bracts, tubular towards the base, conduplicate above, acute, rachis laterally compressed, ancipitose, somewhat flexuous. **Floral bracts** shorter that the ovary, triangular, acute, conduplicate, amplexicaul. **Ovary** terete, thin, not inflated, smooth. **Flowers** 20, simultaneous, non-resupinate, sepals and petals greenish yellow with brown spots, the lip white. **Sepals** spreading, free, obovate, rounded, minutely apiculate, 5-veined, margin entire. **Petals** spreading, free, cuneate-spatulate, truncate to rounded, minutely apiculate, 3-veined, margin entire. **Lip** united to the column, very reduced, suborbicular in general outline, subentire, the margin very irregular; bicallose, with a pair of low keels; forming a pair of small, incipient, triangular lateral lobes; midlobe transversely subrectangular, rounded, minutely apiculate. **Column** straight, somewhat thickened. **Clinandrium-hood** slightly longer than the apex of the column, entire, margin dentate. **Anther** subreniform, with a fleshy dorsal keel, 2-celled. **Pollinia** 2, obovoid, laterally compressed caudicles 2, laminar, hard. **Rostellum** apical, slit. **Nectary** without penetrating the ovary, wide in front of the stigmatic cavity, narrow and acute at the bottom.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PANAMÁ: Chiriquí: Cerro Punta, Finca Dracula, *Soto s.n.*, spirit, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the summit of the cordillera in western Panama, epiphytic at 2200 m altitude. Flowering in March.

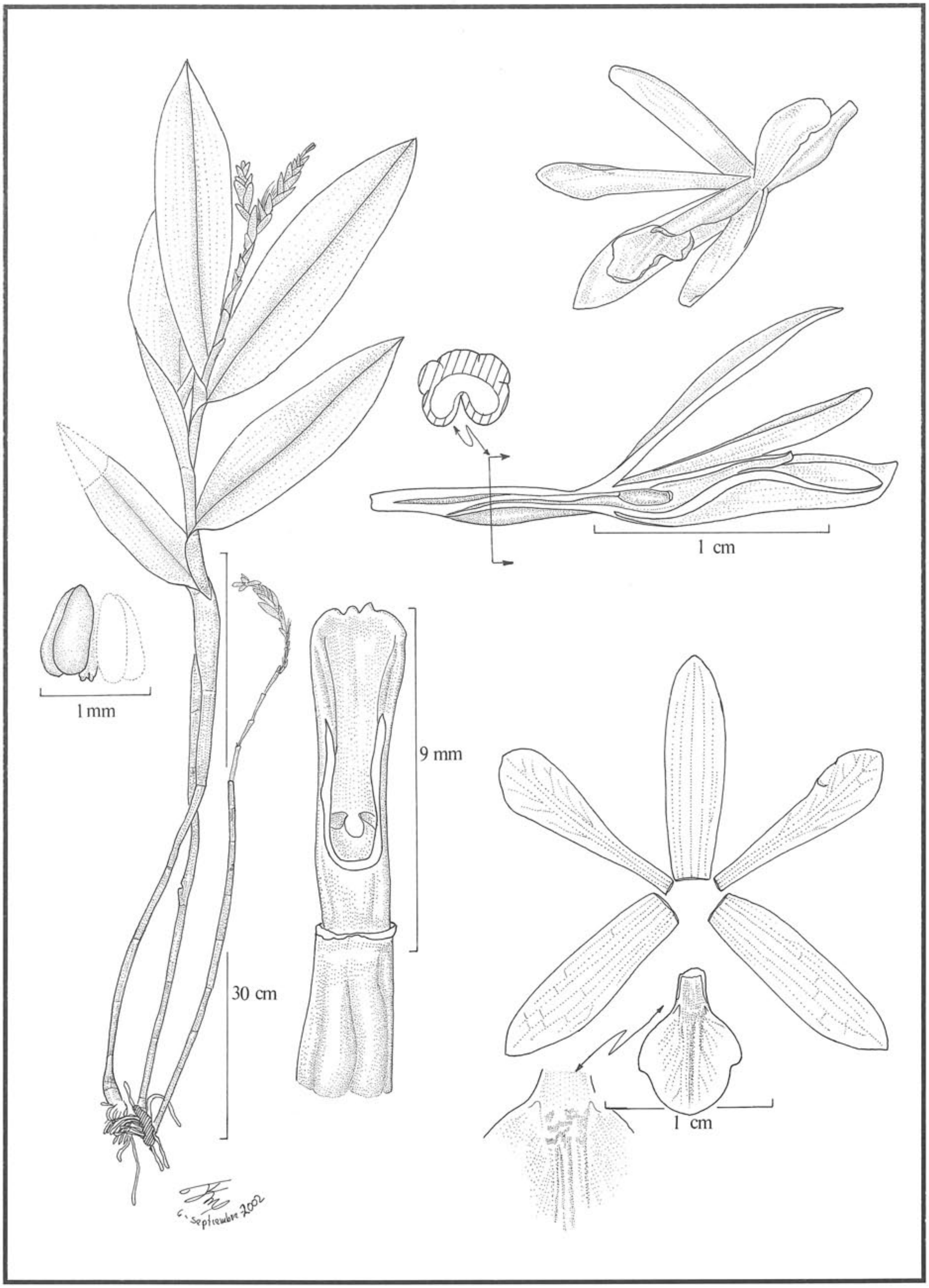
RECOGNITION: *Epidendrum dwyerioides* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, non-resupinate flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized by the paniculate inflorescence with greenish yellow flowers with brown spots, a very reduced, subentire, white lip with a pair of triangular lateral lobes, the nectary wide in front of the stigmatic cavity and narrow at the bottom. *Epidendrum dwyeri* Hágsater has a similar inflorescence but the flowers are larger (sepals 7-8.6 mm long), the lip subentire with the margin sinuate to forming 4, short, digit-like lobes. *Epidendrum philowercklei* Hágsater & E.Santiago has the lip clearly 3-lobed, with the column and claw of the lip forming a wide aperture and the nectary wide and rounded at the bottom.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: in reference to the similarity of this species to *E. dwyeri*, thus the ending οειδης, indicating resemblance. Dr. John D. Dwyer, was Curator Emeritus of the Missouri Botanical Garden, and specialist in Central American Rubiaceae.

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EPIDENDRUM ELLIPSOPHYLLUM L.O.Williams **Plate 930**

EPIDENDRUM ELLIPSOPHYLLUM L.O.Williams, Ann. Missouri Bot. Gard. 28: 419. 1941.

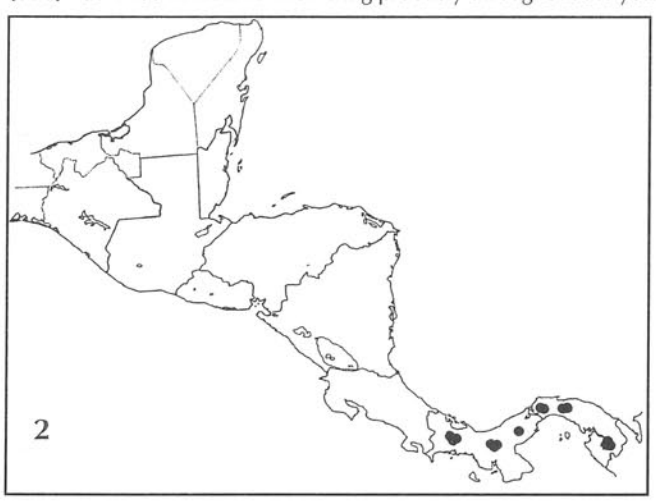
Type: PANAMA: Coclé: hills north of El Valle de Antón, 1000 m, 23 June 1940, ***Paul H. Allen 2178***. Holotype: AMES 58640!

Hierba epífita, simpodial, cespitosa, erecta, de 23-65 cm de alto. **Raíces** basales, delgadas, blancas, 0.6-1.2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, ligeramente engrosados hacia la parte media, erectos, rectos, 13-50 x 0.18-0.8 cm; cubiertos en la base por vainas no foliares, algo infundibuliformes, agudas, no persistentes, fibrosas con el tiempo, 1.5-8 x 0.75-1.5 cm. **Hojas** 3-7, distribuidas a lo largo de la mitad apical del tallo, alternas, articuladas, desiguales en tamaño (la basal más pequeña), caedizas (sólo las 2 o 3 apicales persistentes); vaina tubular, algo infundibuliforme en seco, finamente estriada, 1.5-7.0 x 0.2-1.1 cm; lámina elíptica, cortamente acuminada, margen entero, 7.6-21 x 1.7-4.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, generalmente más corta que la hoja apical, suberecta, produce varios racimos con el tiempo, 6-20 cm de largo; pedúnculo delgado, lateralmente aplanado, ancipitoso, recto, 4-15 cm de largo, cubierto en su totalidad por brácteas tubulares, ancipitosas, agudas a acuminadas, imbricadas, 2-3.7 cm de largo. **Brácteas florales** más largas que el ovario, ovado triangulares, conduplicadas, subagudas, amplexicaules, imbricadas, 10-22 mm de largo. **Ovario** terete, delgado, liso, la superficie ventral inflada hacia la mitad apical, sulcado ventralmente, 9-11 mm de largo. **Flores** 5-8, sucesivas, se desarrollan una a la vez, resupinadas, de color verde pálido, translúcidas; sin fragancia. **Sépalos** entreabiertos, libres, oblongo oblanceolados, redondeados, 5-7-nervados, margen entero, extendido, 10-13 x 3-4 mm. **Pétalos** entreabiertos, libres, espatulados, redondeados, 3-nervados, las nervaduras laterales cortamente ramificadas hacia la mitad apical, margen entero, extendido, 10-12 x 3-4 mm. **Labelo** unido a la columna, incipientemente trilobado, en contorno general ovado orbicular, unguiculado, margen entero, 6.5 x 6 mm; ecalloso, con un par de cunículos pequeños en la base de la lámina, provisto de 3 quillas muy bajas en la superficie del disco; lóbulos laterales muy pequeños, oblicuos, angostamente elípticos, redondeados, 2.3 x 2.6 mm; lóbulo medio hemiorbicular, redondeado, 2.6 x 4.7 mm. **Columna** recta, delgada, 9 mm de largo incluyendo el clinandrio. **Clinandrio** prominente, dos veces más largo que el cuerpo de la columna, ápice truncado, margen levemente ondulado. **Antera** no vista. **Polinios** 4, obovoides, alargados; caudículas suaves y granulosas, tan largas como los polinios. **Rostelo** basal, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando más de la mitad del ovario, delgado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb**. **Roots** basal, thin, white. **Stems** simple, cane-like, terete, slightly thickened towards the middle, straight; the basal half with infundibuliform, acute sheaths, turning fibrous with time. **Leaves** 3-7, distributed throughout the upper half of the stem, unequal, the lowermost smaller, deciduous (only 2 or 3 persistent); sheath tubular, somewhat infundibuliform and striated when dry; blade elliptic, short acuminate, margin entire. **Inflorescence** apical, racemose, shorter than the apical leaf, suberect, produces several racemes with time; peduncle thin, ancipitose, straight, covered by imbricating bracts, these tubular, ancipitose, acute to acuminate. **Floral bracts** longer than the ovary, ovate-triangular, conduplicate, subacute, amplexicaul, imbricating. **Ovary** terete, thin, smooth, ventrally inflated and sulcate towards the apical half. **Flowers** 5-8, successive, developing one at a time, resupinate, pale green, translucent, not fragrant. **Sepals** partly spreading, free, oblong-oblanceolate, rounded, 5-7-veined, margin entire, spreading. **Petals** partly spreading, free, spatulate, rounded, 3-veined, the lateral veins much branched above the middle, margin entire. **Lip** united to the column, shallowly 3-lobed, ovate-orbicular in outline, unguiculate, margin entire; ecallose, with a pair of cunicula at the base of the blade, with 3 low keels on the disc; lateral lobes very small, oblique, narrowly elliptic, rounded; midlobe semiorbicular, rounded. **Column** straight, long including the clinandrium, thin. **Clinandrium-hood** prominent, twice as long as the body of the column, apex truncate, margin slightly undulate. **Pollinia** obovoid, elongate; caudicles soft and granulose, as long as the pollinia. **Rostellum** basal, slit. **Nectary** penetrating more than half the ovary, smooth.

OTHER SPECIMENS: PANAMA: Chiriqui: Camp Hornito, Fortuna dam site, 1000-1200 m, 14 VIII 1976, *Dressler 5364*, AMO! Fortuna dam site, 1200-1400 m, 15 IX 1977, *Folsom 5508*, MO! **Coclé:** Hills N of El Valle de Antón, ca. 1000 m, 1 IX 1941, *Allen 2706*, AMES! El Valle, 800-1000 m, 28 VI 1967, *Duke 13169(3)*, MO x2! S of Cascajal, along continental divide, 800-900 m, 7 XI 1981, *Knapp 1968*, AMO! MO! Above El Valle, 1000 m, *Luer 1110*, SEL! **Colón:** Santa Rita ridge, east of Colón, 13 I 1968, *Dressler 3342*, Herb. Dressler! **Darién:** Ascent of Cerro Pirre from Río Pirre south of El Real, 750-1030 m, 11 VIII 1962, *Duke 5334A*, MO! Cerro Pirre, 2500-4500 ft, 9-10 VIII 1967, *Duke E13797*, MO! Ibid. *Duke E13855*, F! MO! Ibid. Rancho Frio to Rancho Plastico, 800-1200 m, 10 VII 1977, *Folsom 4202*, MO! **Panamá:** Cerro Jefe, flowered in cult. 3 VII 1964, *Dressler 2917*, Herb. Dressler! Ibid. 670 m, 1 I 1972, *Gentry 3498*, MO! Vicinity of Cerro Jefe, along trail from the ridge above Altos de Azul down towards Rio Chagres, 700-850 m, 23 XII 1987, *McPherson 11913*, AMO! (Illustration voucher) MO! **Veraguas:** 6 mile beyond Escuela Agricola Alto Piedra, 730 m, 4 IV 1976, *Croat 34080*, AMO! MO! 6-7 km W of Santa Fé, 2900 ft, 17 II 1974, *Nee 9829*, MO! NY! **San Blas:** El Llano Cartí, 350 m, 11 III 1985, *Nevers 5095*, MO! Ibid. 18 VI 1986, *Nevers 7908*, MO! Ibid. ca. 350 m, 27 I 1986, *McPherson 8186*, MO!

DISTRIBUTION AND ECOLOGY: Apparently endemic to Panama, ranging from North Panamá through the Darién, at [350] 700-1400 m altitude. Flowering probably throughout the year.

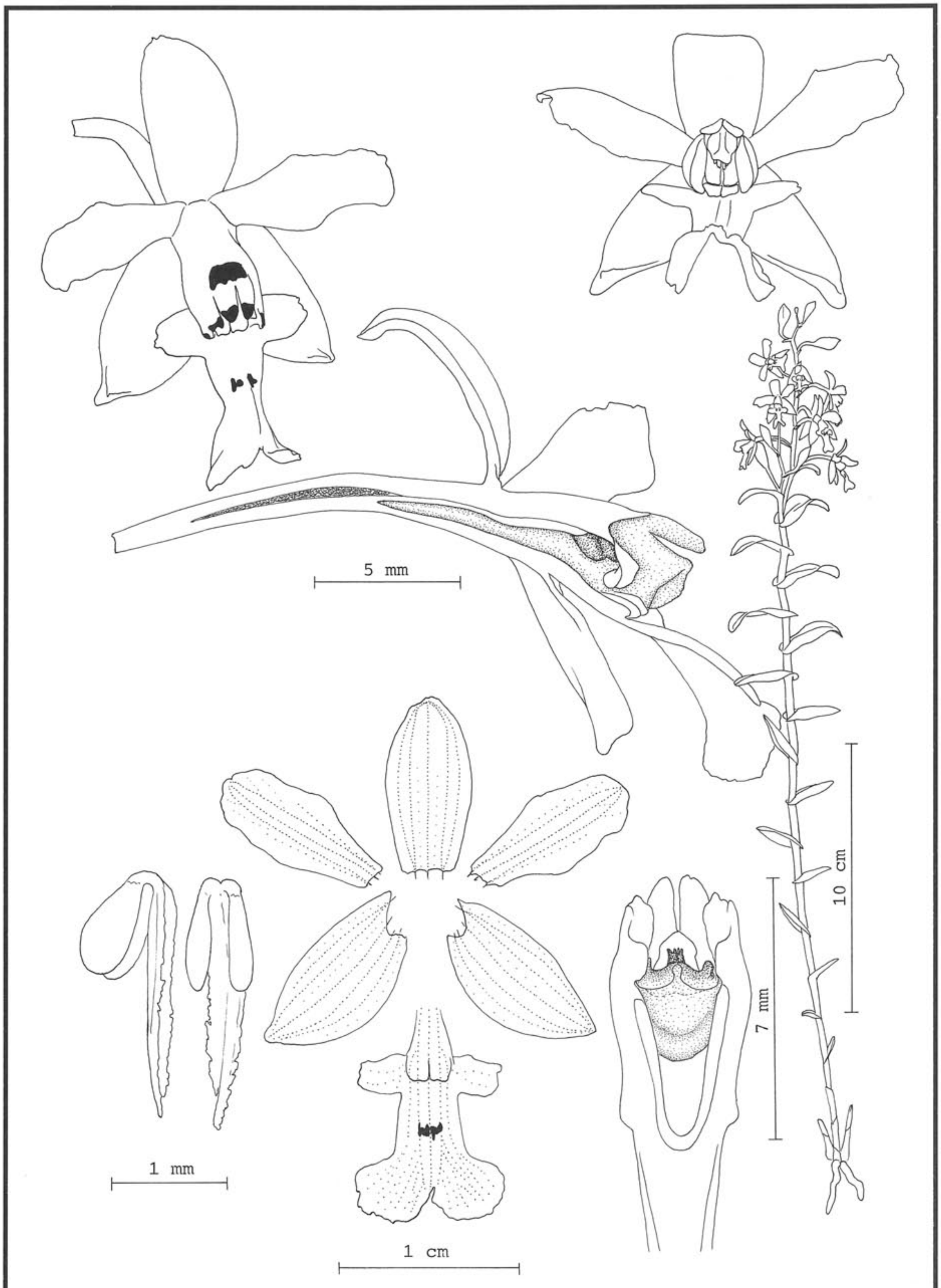


RECOGNITION: *Epidendrum ellipsophyllum* belongs to the Ellipsophyllum Subgroup of the Albertii Group which is recognized by the caespitose habit, the simple cane-like stems, the apical inflorescence with the peduncle covered by imbricating bracts, and several racemes produced with time; the flowers are produced singly in succession and have a very long clinandrium hood. The species has straight, somewhat spreading sepals, a generally ovate-orbicular lip with small rounded lateral lobes and the midlobe hemiorbicular, rounded. It closely resembles *Epidendrum hygrohylephilum* Hágsater & E.Santiago, from the western coast of Colombia, which has narrower leaves and acute petals and lip, the apical lobe being triangular.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the elliptic leaves of this species.

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EPIDENDRUM ENDRESII Rchb.f. **Plate 931**

EPIDENDRUM ENDRESII Rchb.f., in Gard. Chron. 19: 432. 1883.

Type: COSTA RICA: [San José:] bei San Cristobal, an den Südanläufern der Montaña de la Candelaria, III 1878, ***F. C. Lehmann 177.*** Lectotype [here designated]: W 50033 pro parte! Paratypes: *Endres* W 50033 pro parte! Hort. *Sander's s.n.*, W 50032! Synonyms: *Oerstedella endresii* (Rchb.f.) Hágsater, Orquídea (Mexico City) 8(1): 21. 1981.
Epidendrum adolphii Schltr. Repert Sp. Nov. 3: 108. 1906. Type: COSTA RICA: Tablazo, 1800 m, ***A. Tonduz s.n.*** Holotype: CR 7950, destroyed at B. Lectotype [here designated]: tracing at AMES! *Epidendrum tonduzii* Lankester, Orch. Rev. 32: 163. 1924. Type: not given. Lectotype [here designated]: COSTA RICA: Tablazo, 1800 m, ***A. Tonduz s.n.***, tracing of CR 7950, AMES! See note in Appendix. Not *Epidendrum tonduzii* Schltr. = *Prosthechea livida* (Lindl.) W. E. Higgins.

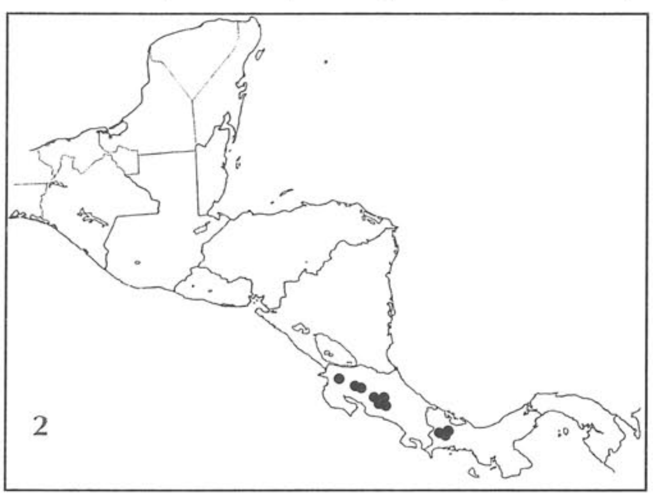
Hierba epífita o muy raramente terrestre, simpodial, cespitosa; 8-27 cm de alto. **Raíces** basales, carnosas, gruesas, blancas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos; 5.5-20 x 0.1-0.3 cm. **Hojas** 5-14, distribuidas a todo lo largo del tallo, alternas, articuladas, erecto extendidas, semiamplexicaules; vainas tubulares, verrugosas, las verrugas teñidas de morado intenso; 3-15 x 1.2-3 mm; lámina ovada a angostamente ovada, ápice bilobado, margen entero; 1-3.3 x 0.4-1.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a incipientemente paniculada (ocasionalmente puede producir un racimo adicional en la parte basal del pedúnculo), erecta, laxa, 4-8.5 cm de largo; pedúnculo terete, delgado, 7-14 mm de largo; generalmente provisto en la base de una bráctea semejante a las florales, angostamente triangular, acuminada, abrazadora; 7-25 mm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, las apicales progresivamente más cortas; 3-11 mm de largo. **Flores** 5-16, simultáneas, resupinadas, blancas, (ocasionalmente con el ápice de los sépalos azul violeta), con el labelo manchado de manera variable de azul violeta (desde un par de puntos en el istmo hasta casi toda la lámina), el ápice de la columna azul violeta; ligeramente fragantes a rebanadas de pepino fresco. **Ovario** terete, delgado, no inflado, liso; 11-21 mm de largo. **Sépalos** extendidos, elípticos a ligeramente obovados, redondeados, 5-nervados, en ocasiones con algunas nervaduras secundarias intermedias, margen entero; 8-11 x 4-6.5 mm; el **dorsal** libre; los **laterales** ligeramente fusionados en la parte basal, oblicuos, con una quilla dorsal diminuta. **Pétalos** extendidos, libres, obovado espatulados, obtusos, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen irregular; 8-10 x 3-6 mm. **Labelo** unido a la columna, 3-lobado, 7-10 x 6-10 mm; bicalloso, los callos gruesos; lóbulos laterales pequeños, triangulares a subcuadrados, margen irregular; 1.5-3 x 1.5-2.3 mm; lóbulo medio con un istmo basal oblongo, el ápice con un par de lóbulos suborbiculares a subcuadrados, con un seno profundo, divergentes, margen crenado; 5-8 x 6-10 mm. **Columna** recta, 6-7 mm de largo; terminada en cuatro lóbulos (un par del clinandrio y un par lateral) laminares, truncados. **Clinandrio** corto, sin sobrepasar el cuerpo de la columna, bilobado, margen entero. **Antera** obovoide, con el ápice truncado. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más largas que los polinios. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Lóbulos laterales del estigma** obsoletos. **Nectario** poco profundo, penetrando ca. de 1/3 del ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic or rarely terrestrial, sympodial, caespitose **herb. Roots** basal, fleshy, thick, white. **Stems** simple, cane-like, terete, thin, erect, straight. **Leaves** 5-14, distributed throughout the length of the stem, alternate, articulate, erect-spreading; sheaths tubular, verrucose, the warts tinged deep purple; blade ovate to narrowly ovate, apex bilobed, margin entire. **Inflorescence** apical, racemose to slightly paniculate, erect, lax-flowered; peduncle terete, thin, generally provided at the base with a bract similar to the floral bracts. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate, the apical ones progressively shorter. **Flowers** 5-16, simultaneous, resupinate, white (the apices of the sepals occasionally violet-blue), the lip marked with violet-blue, from a pair of spots on the isthmus to nearly the whole lip, the apex of the column violet-blue; slightly fragrant of fresh sliced cucumber. **Ovary** terete, thin, smooth. **Sepals** spreading, elliptic to slightly obovate, rounded, 5-veined, occasionally with some secondary intermediate veins, margin entire; the lateral sepals somewhat fused basally, oblique, with a minute dorsal keel. **Petals** spreading, free, obovate-spatulate, obtuse, 3-veined, the lateral veins branching from the base and thus appearing 5-veined, margin irregular. **Lip** united to the column, 3-lobed; bicallose, the calli thick; lateral lobes small, triangular to subquadrate, margin irregular; midlobe with an oblong isthmus, apex bilobed, the lobes divaricate with a deep apical sinus, sometimes mucronate, margin crenate. **Column** straight, the apex 4-lobed, lobes truncate. **Clinandrium-hood** short, without surpassing the body of the column, bilobed, truncate, margin entire. **Anther** obovoid, apex truncate. **Pollinia** 4, obovoid, laterally compressed, caudicles longer than the pollinia. **Rostellum** perpendicular to the axis of the column, forming a wide sinus. **Nectary** penetrating about 1/3 of the ovary, not inflated, smooth.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from Costa Rica to western Panama, in wet cloud forests, epiphytic and rarely terrestrial, 1250-2500 m. Flowering throughout the year, though mainly from September to April.

RECOGNITION: *Epidendrum endresii* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is perpendicular to the axis of the column instead of parallel, forming a wide, open sinus, and without a viscidium, and the Verrucosum Subgroup, recognized by the small to medium sized, membranaceous flowers with sepals and petals immaculate, a bilobed clinandrium hood slightly surpassing the body of the column, obovoid, subequal pollinia with long granulose caudicles. The species is recognized by the ovate to narrowly ovate leaves (1-3.3 cm long), white flowers, with the bicallose lip nearly totally violet-blue, or white with a small violet-blue spot on the isthmus, and the apex of the column 4-lobed and violet-blue; sepals 8-11 mm long. *Epidendrum pumilum* Rolfe has greenish yellow flowers, sepals 5-7 mm long, lip with a pair of purple spots, the apex of the column 3-lobed, white, the callus tridentate, and the apical margin of the lip dentate. *Epidendrum parviexasperatum* Hágsater has larger, elliptic-lanceolate leaves (1.5-5.7 cm long), apical and lateral inflorescences with brown bordered with yellow tepals, the lip white marked with violet, the apex of the column 4-lobed. *Epidendrum x monteverdense* (Pupulin & Hágsater) Hágsater, the natural hybrid cross beetween *E. endresii* and *E. exasperatum* Rchb. f. has vigorous, branching stems, sepals and petals cream-colored, the lip with a couple of violet spots, and the apical lobes of the column sometimes apically marked with violet.



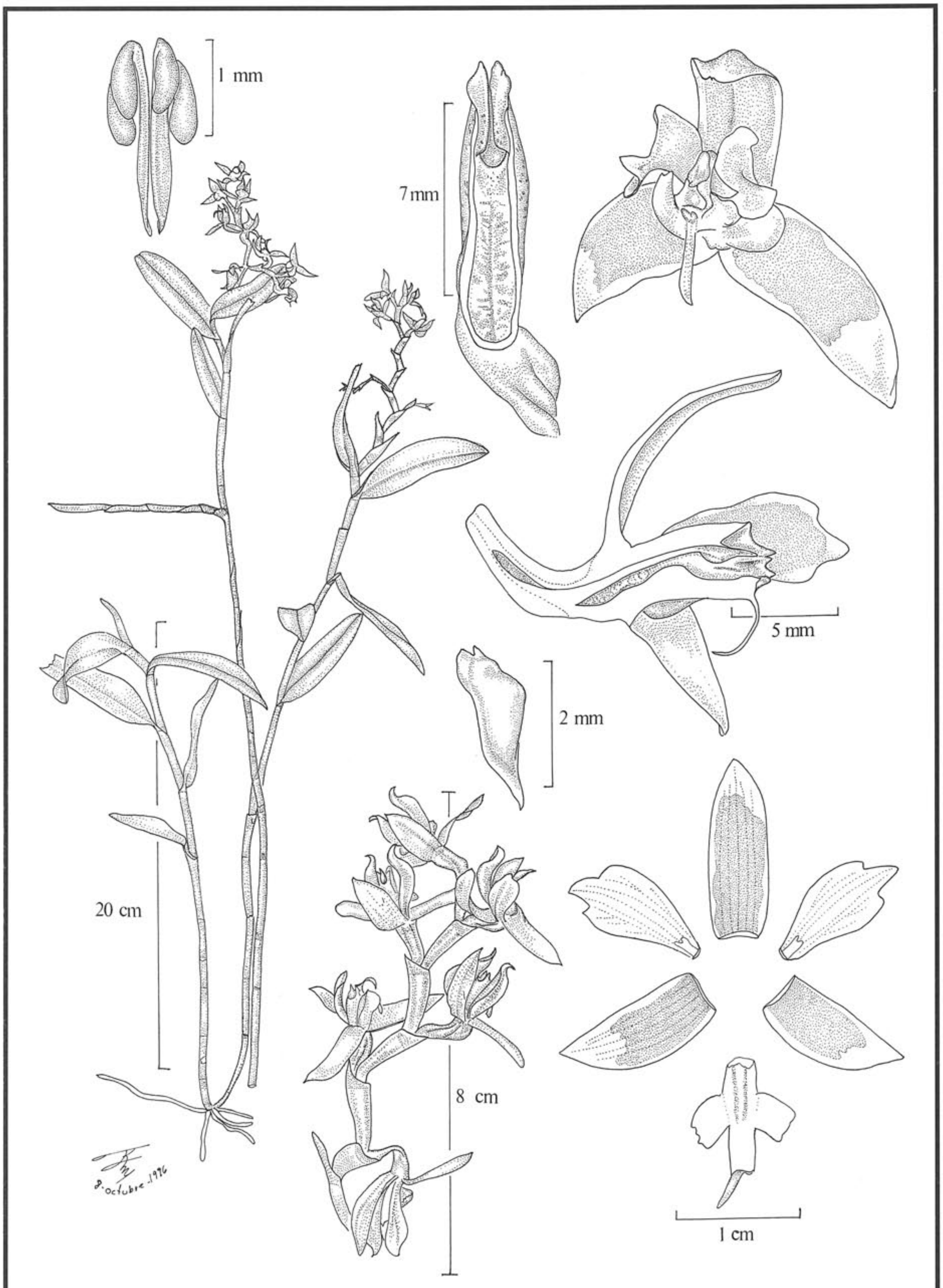
NOTES: See appendix.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of A. R. Endres, Austrian(?) botanical collector who prepared numerous specimens in Costa Rica between 1860 and 1875, most of which are deposited in the Reichenbach Herbarium in Vienna.

REFERENCES: Bechtel, H. et al., 1981, **The Manual of Cultivated Orchid Species**, MIT Press, p. 139, 209. Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 89. Plate 6. fig. 4. Hágsater, E., in Hammel et al., 2003, **Manual de Plantas de Costa Rica**, vol. III, Missouri Botanical Garden, p. 347-353. Hágsater, E., & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. From *Oerstedella* Rchb.f., **Lankesteriana** 5(1): 73.

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EPIDENDRUM EPIDENDROIDES (Garay) Mora-Retana & J.García **Plate 932**

EPIDENDRUM EPIDENDROIDES (Garay) Mora-Retana & J.García, Brenesia 33: 124. 1990.
Basionym: *Neowilliamsia epidendroides* Garay, Orchid Digest 41(1): 20. 1977. Type: COSTA RICA: Cartago: 7.5 km S of Tapantí, 1520 m, 8 October 1967, ***Roy W. Lent 1390.*** Holotype: F! Isotype: SEL!

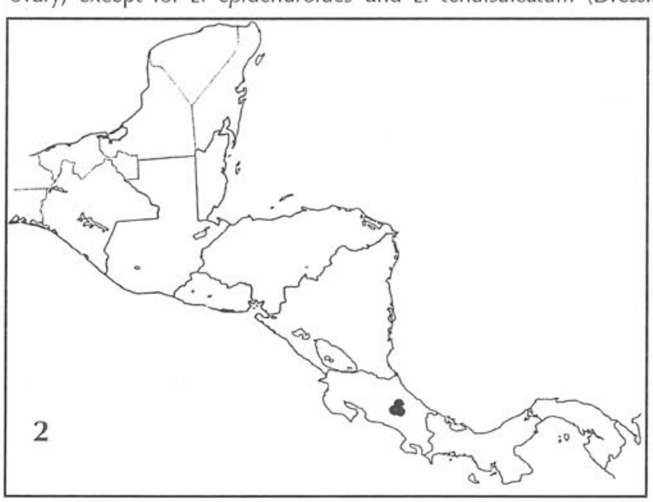
Hierba epífita, simpodial, 20-40 cm de alto. **Raíces** de los entrenudos basales de cada tallo, filiformes, blancas, 0.3-0.5 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales o intermedios de tallos anteriores, tipo caña, teretes en la base y ancipitosos arriba, delgados, erectos, rectos, 12-28 x 0.16-0.44 cm; cubiertos en la base por vainas no foliáceas, tubulares, algo infladas en el ápice, 12-34 mm de largo. **Hojas** 2-5, distribuidas en la mitad apical de los tallos, alternas, articuladas; vaina tubular, ancipitosa, 14-35 x 1.6-4.4 mm; lámina oblongo elíptica, obtusa, diminutamente apiculada, subcoriácea, margen entero, 4.5-7 x 1.2 cm; con una lígula del lado opuesto de la lámina, triangular, subaguda, 0.6-0.7 mm de largo. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa a paniculada, dística, pauciflora, laxa, erecta, 8.5-17 cm de largo; pedúnculo corto, lateralmente aplanado, ancipitoso, 3-3.5 cm de largo; provisto en la parte media de una bráctea angostamente triangular, acuminada, conduplicada, ancipitosa, muy prominente, 1.5-3 cm de largo; raquis fractiflexo, lateralmente aplanado, ancipitoso, bialado, 5.5-13 cm de largo. **Brácteas florales** ca. de 1/3 del largo del ovario (o menos), deltoides, agudas, conduplicadas, ancipitosas, amplexicaules, 3-5 mm de largo. **Ovario** triquetro, delgado, fuertemente incurvado, no inflado, no ornamentado, 8-9 mm de largo. **Flores** 7-18, simultáneas, carnosas, no resupinadas, arregladas en dos filas, dísticas, los sépalos amarillos, manchados de café rojizo hacia la base, los pétalos café rojizo con el ápice amarillo, el labelo blanco con el lóbulo medio amarillo y una mancha púrpura en la base del lóbulo medio, la columna blanca; sin datos de fragancia. **Sépalos** libres, oblongo elípticos, agudos, con una quilla dorsal carnosa, 5-nervados, margen extendido, entero, 11-14 x 4-5 mm; el **dorsal** incurvado, cuculado; los **laterales** algo reflexos, oblicuos. **Pétalos** entreabiertos, fusionados de manera oblicua a la base de la columna, casi paralelos al eje de la columna, espatulados, el ápice tridentado con el diente medio agudo y recurvado en posición natural, 5-nervados, las nervaduras laterales cortamente ramificadas a todo lo largo, margen extendido, entero, 11.5-13 x 4-5 mm. **Labelo** unido a la columna, 3-lobado, la lámina extendiéndose desde la base de la columna, base truncada, 8-12 x 7-8.5 mm; bicalloso, los callos ubicados en la mitad del lóbulo medio, provisto de una quilla carnosa que se desvanece cerca de la base del lóbulo medio; lóbulos laterales subcuadrados, truncados, 3-4 x 2-3.5 mm; lóbulo medio rectangular y unido a la columna en la mitad basal, terminando en los callos, la mitad apical triangular acuminada, terete, recurvada hacia abajo y atrás en posición natural, margen entero, 5 mm de largo. **Columna** recta, gruesa, internamente con las paredes rugosas, con los márgenes laterales irregularmente dentados, 8 mm de largo. **Clinandrio** reducido, margen eroso denticulado. **Antera** 4-locular, elipsoide alargada, el ápice triangular acuminado, la base bilobada. **Polinios** 4, angostamente obovoides, lateralmente comprimidos, el par exterior ubicado algo más abajo; caudículas 2, laminares, duras, del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** ocupando ½ del lago de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando detrás del perianto, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial **herb. Roots** produced from the basal internodes stem, filiform, white, thin. **Stems** simple, produced from a basal to intermediate internode of the previous stem, cane-like, terete at base, ancipitose above, thin, erect, straight; base covered by non-foliaceous, tubular sheaths, somewhat inflated towards the apex. **Leaves** 2-5, distributed throughout the apical half of the stems, alternate, articulate; sheath tubular, ancipitose, with an ligule opposite the blade, triangular, subacute; blade oblong-elliptic, obtuse, minutely apiculate, subcoriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose to paniculate, lax, few-flowered, erect; peduncle short, ancipitose; provided in the middle with a triangular, narrow, acuminate, conduplicate, ancipitose, prominent bract; rachis zigzag, ancipitose, two-winged. **Floral bracts** about 1/3 the length of the ovary or less, deltoid, acute, conduplicate, ancipitose. **Ovary** triquetrous, thin, strongly incurved, smooth. **Flowers** 7-18, simultaneous, fleshy, resupinate, distichous, sepals yellow tinged with reddish brown towards base, petals reddish brown with apex yellow, lip white, midlobe yellow with a purple blotch at the base, column white. **Sepals** free, oblong-elliptic, acute, with a dorsal fleshy keel, 5-veined, margin spreading, entire, dorsal sepal incurved, cucullate, lateral sepals somewhat reflexed, oblique. **Petals** partly spreading, obliquely fused to the base of the column and nearly parallel to the axis of the column, spatulate, the apex tridentate with the mid-tooth acute and recurved in natural position, 5-veined, lateral veins short-branched throughout, margin spreading, entire. **Lip** united to the column, lamina spreading from the base of the column, 3-lobed, base truncate; bicallose, calli at the middle of the midlobe, provided with a fleshy keel that disappears near the base of the midlobe; lateral lobes subquadrate, truncate, apical margin irregular; midlobe rectangular and united to the column, ending in the two calli, apical half triangular-acuminate, terete, recurved down and backwards, margin entire. **Column** straight, thick, internal walls rugose, with lateral margins irregular dentate. **Clinandrium-hood** reduced, margin erose-denticulate. **Anther** 4-celled, ellipsoid-elongate, apex acuminate, base bilobed. **Pollinia** 4, narrowly obovoid, laterally compressed, outer pair somewhat lower, caudicles 2, laminar, hard, twice as long as the pollinia. **Rostellum** apical, slit. **Nectary** shallow, narrow, barely penetrating the ovary, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic Tapantí,Costa Rica, epiphytic, 900-1700 m altitude. Flowering June to October.

RECOGNITION: *Epidendrum epidendroides* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis with conduplicate, acute bracts, distichous, non-resupinate flowers, lip often digitate and 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized by the racemose to paniculate inflorescence, zigzag rachis, apically tridentate petals and peculiar lip with lateral lobes basal to the column, and midlobe half united to the column, calli at the middle, and apical half triangular, acuminate and revolute; ovary triquetrous. The majority of the species of this group have a terete ovary, except for *E. epidendroides* and *E. tenuisulcatum* (Dressler) Hágsater, which has an 25-50 cm long, paniculate inflorescence, acute petals and midlobe of the lip triangular, same size and shape of the lateral lobes. *Epidendrum bicuniculatum* Hágsater & E.Santiago has a similar but racemose inflorescence, sepals 10 mm long, flowers white tinged with magenta, petals spatulate, rounded, lip subentire, widely obovate, with a very small narrowly triangular midlobe, callus formed by 5 subdigitiform lobes, column with apical, erect tooth and nectary with an additional short cuniculate cavity that does not penetrate de ovary.

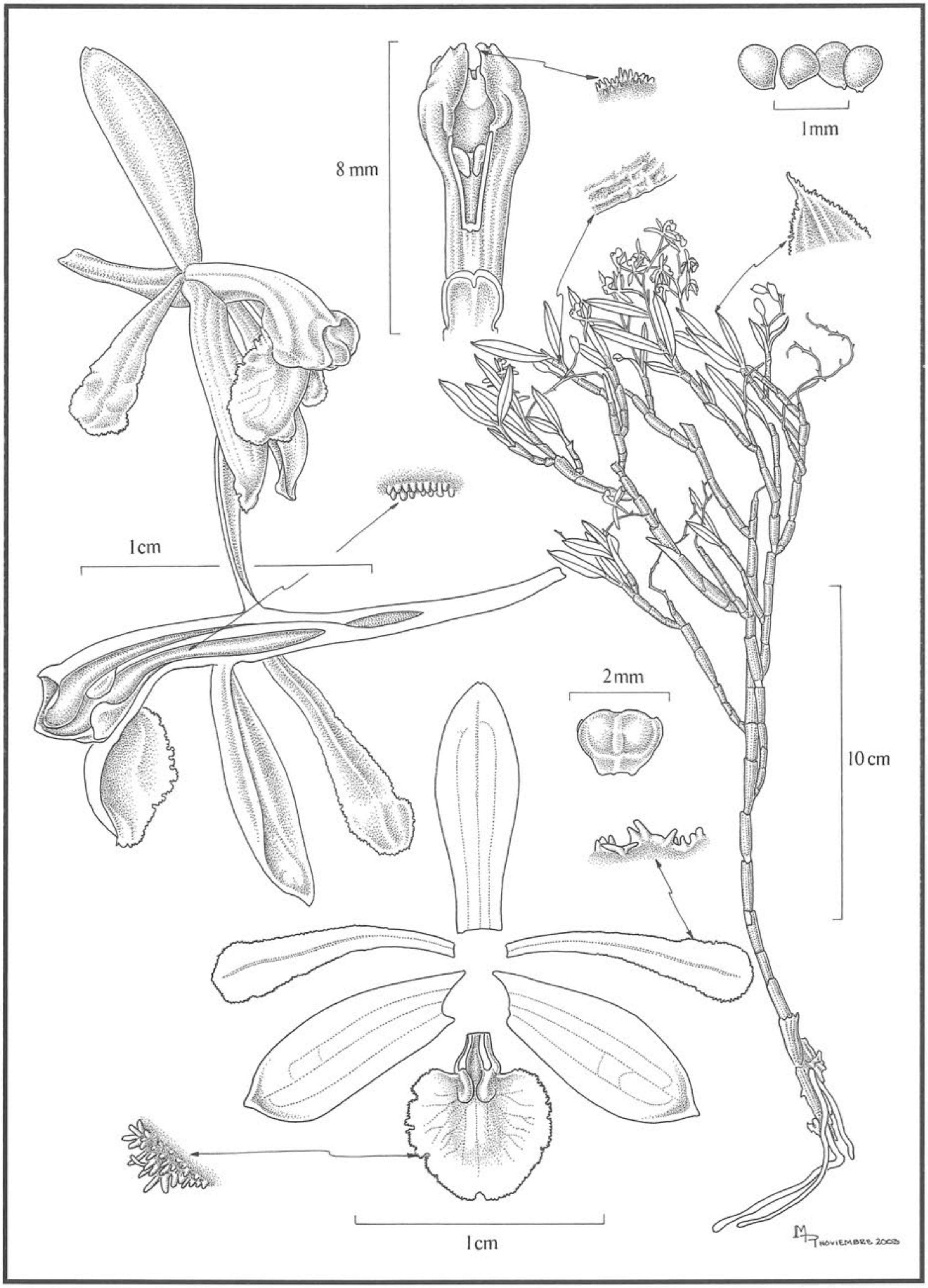


NOTE: In nearly all species of *Epidendrum* the lip expands from the apex of the column, or from where the union of the column and the claw of the lip end. However in this species, as well as in *E. bicuniculatum* the lip starts spreading from the base of column, the union of the column to the lip extends well beyond, to about the middle of the lip or beyond. In *E. tenuisulcatum* lip expands from middle of column.

CONSERVATION STATUS: DD. Data deficient. Highly endemic, found within a National Reserve.

ETYMOLOGY: From the Greek επιδενδρον, growing on trees, and the ending -οιδεσ, indicating resemblance, in reference to the *Epidendrum* like aspect of the species which was originally described in another genus due to its having only 2 pollinia.

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EPIDENDRUM EROSUM Ames & C.Schweinf. **Plate 933**

EPIDENDRUM EROSUM Ames & C.Schweinf., Schedul. Orchid. 8: 44-45, pl. 24. 1925.

Type: COLOMBIA: Páramo de Guasca, January 1920, ***Bro. Aristide-Joseph A464.*** Holotype: AMES!

Synonym: *Epidendrum holmnielsenii* Hágsater & Dodson, Icon. Orch. (Mexico City) 4: pl. 445. 2001. Type: ECUADOR: Azuay: at lake Zarugucho, 20 km west of Cuenca, 3000 m, 5 June 1958, ***Calaway H. Dodson 414.*** Holotype: SEL! Isotype: Flower in spirit, AMO!

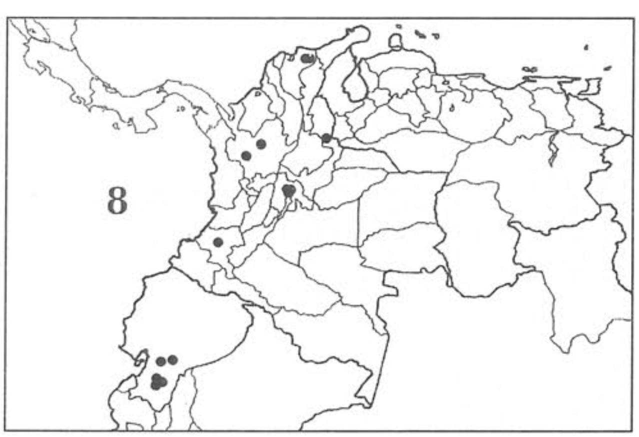
Hierba epífita, muy raramente terrestre, erecta, monopodial, ramificada, 30-60[100] cm de alto. **Raíces** basales, carnosas, gruesas, 1.1-3.0 mm de grosor. **Tallos** muy ramificados hacia el ápice, tipo caña, teretes, delgados; el principal 20.5-36 x 0.23-0.42 cm; las ramificaciones produciendo de los entrenudos apicales múltiples ramificaciones progresivamente más cortas, 1.5-18 x 0.12-0.23 cm. **Hojas** del tallo principal 11 o más, generalmente no persistentes, 2-6 en las ramificaciones, distribuidas hacia la mitad apical de los tallos; vainas ligeramente ancipitosas, infundibuliformes, estriadas y rugosas, 5-18 x 1.2-4.0 mm; lámina angostamente elíptica, ápice agudo, con una quilla dorsal, margen diminutamente dentado, las del tallo principal 6.0-8.0 x 0.9-1.6 cm; las de las ramificaciones 2.4-5.5[9] x 0.4-1.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, arqueada, laxa, [2.5]4-6[11] cm de largo; pedúnculo terete, delgado, corto, desprovisto de brácteas, 0.5-1.5 cm de largo; raquis terete, delgado, recto, 2.5-5[9.5] cm de largo. **Flores** 6-16, simultáneas, resupinadas, de color pardo amarillento a amarillo verdoso, labelo con manchas púrpura rosadas, el ápice de la columna teñido de púrpura; sin datos de fragancia. **Brácteas florales** más cortas que el ovario, lanceoladas, acuminadas, 2-5 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 5-15 mm de largo. **Sépalos** extendidos, angostamente obovados, redondeados, 3-nervados, margen entero, 10-12 x 3.3-4.0 mm; los **laterales** unidos de manera oblicua en la base de la columna, oblicuos, diminutamente apiculados. **Pétalos** extendidos, libres, linear subespatulados, redondeados, 1-nervados, margen eroso denticulado, 10-11 x 2.0-3.0 mm. **Labelo** unido a la columna, entero, subcordiforme trapezoide, ápice truncado a subagudo, margen denticulado pubescente, convexo en posición natural, 5.0-5.4 x 5.0-6.0 mm; bicalloso, los callos gruesos, oblongos, cortos, disco algo engrosado con tres quillas incipientes. **Columna** delgada, arqueada hacia la mitad, obcónica en el ápice, 7-9 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, con una quilla roma y baja en la parte media, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** penetrando 1/5 del ovario, no inflado, diminutamente papiloso. **Cápsula** elipsoide, 20-22 x 15-20 mm; pedicelo corto 4-8 mm de largo; cuello apical 7-8 mm de largo, con el perianto persistente.

Epiphytic or rarely terrestrial, erect, monopodial, branching **herb. Roots** basal, fleshy, thick. **Stems** much branched towards the apex, cane-like, terete, thin, with a relatively long main stem and progressively shorter branches produced from the subapical internodes of the previous stems. **Leaves** of the main stem 11, those of the branches 2-6, distributed throughout the upper half of the stems, sheaths slightly ancipitose, infundibuliform, striated and rugose; blade narrowly elliptic, apex acute, margin minutely dentate, with a dorsal keel. **Inflorescence** apical, racemose, arching, lax-flowered; peduncle terete, thin, short, without bracts; rachis terete, thin. **Flowers** 6-16, simultaneous, resupinate, yellowish brown to greenish yellow, the lip pink-purple spotted, apex of column purple. **Floral bracts** shorter than the ovary, lanceolate, acuminate. **Ovary** terete, thin, smooth. **Sepals** spreading, free, narrowly obovate, rounded, 3-veined, margin entire; the **laterals** united obliquely to the base of the column, oblique, minutely apiculate. **Petals** spreading, free, linear-subspatulate, rounded, 1-veined, margin erose-denticulate. **Lip** united to the column, entire, subcordiform trapezoid, apex truncate to subacute, margin denticulate-pubescent, convex in natural position; bicallose, the calli thick, oblong, short, disc somewhat thickened, with 3 thickened low keels. **Column** thin, arched towards the middle, obconical towards the apex. **Clinandrium-hood** short, margin entire. **Anther** reniform, with a low rounded keel in the middle, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating 1/5 of the ovary, thin, minutely papillose. **Capsule** ellipsoid, pedicel short, apical neck long, perianth persistent.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread in Colombia and southern Ecuador, in páramo, at 2100-3500 m altitude. Flowering December to August.

RECOGNITION: *Epidendrum erosum* belongs to the Scabrum Group, Soratae Subgroup characterized by the branching habit starting on a monopodial, primary stem, infundibuliform, rugose leaf-sheaths, lanceolate, aristate, acute leaves, racemose subcapitate inflorescence on a short, thin peduncle, and the bicallose lip. The species can be recognized by the narrowly elliptic leaves, generally elongate, lax-flowered inflorescence, entire, subcordiform-trapezoid lip with purple-pink spots and the margin denticulate-pubescent, the apex of the column purple tinted and the petals linear-subspatulate, rounded, the margin erose-denticulate. *Epidendrum ellemaniae* Hágsater & Dodson has somewhat shorter leaves, and flowers about half the size, sepals being 5.4-5.6 mm long, and a deeply cordiform, acute lip, petals linear-oblanceolate, acute, margin entire. *Epidendrum scopulorum* Kraenzl. has a more strict habit, leaves about the same size, sepals 9-9.5 mm long, but cordiform, apiculate and with an entire margin, the petals narrower, acute and also with an entire margin. *Epidendrum sumapacense* Hágsater & E.Santiago has wider leaves, somewhat larger flowers without any purple-pink spots, a straight column and a shorter lip with developing lateral lobes, and wider petals.

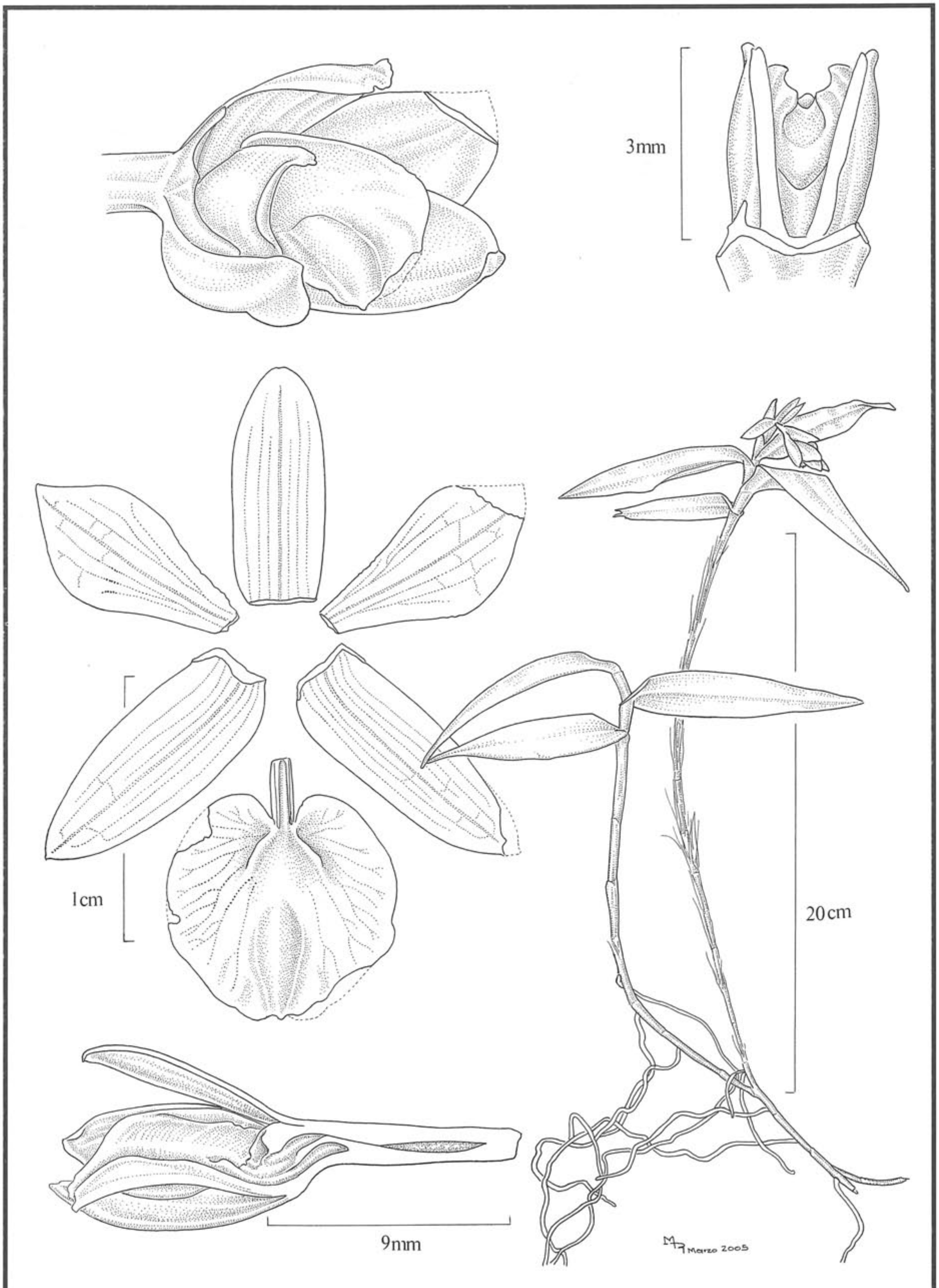


CONSERVATION STATUS: DD. Data deficient. Apparently widespread and common in páramo around Bogotá.

ETYMOLOGY: From the Latin *erosus*, having an irregular toothed or gnawed margin.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM ESTRELLENSE Ames

Plate 934

EPIDENDRUM ESTRELLENSE Ames, Schedul. Orchid. 4: 39. 1923.

Type: COSTA RICA: Cartago: La Estrella, January 1923, ***Charles H. Lankester & Alfredo Sancho 379.*** Holotype: AMES 23724! (Illustration AMES 26873!)

Hierba epífita, de simpodio rastrero, suberecta, de crecimiento sucesivo lateral; ca. 40 cm de alto. **Raíces** distribuidas a lo largo de los entrenudos basales, escasas, delgadas; 0.3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos en la base, levemente flexuosos hacia el ápice; ca. 24 x 0.4 cm; cubiertos en la mitad basal por vainas tubulares, escariosas, fibrosas con el tiempo; 3.2-4.2 cm de largo. **Hojas** 5, agrupadas en la mitad apical del tallo, alternas, articuladas, la basal ligeramente más pequeña; vainas tubulares; 8-24 mm de largo; lámina angostamente elíptico lanceolada, aguda, coriácea, margen entero; 8-12 x 1.7-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, arqueada, corta, densa; 5 cm de largo; pedúnculo corto; 2.5 cm de largo; oculto en su totalidad por 7 brácteas semejantes a las florales, angostamente ovadas, subagudas, conduplicadas, imbricadas, glumáceas; 11-16 mm de largo; raquis corto, oculto por las brácteas florales; 2.5 cm de largo. **Brácteas florales** mucho más largas que el ovario, ovadas, subagudas, conduplicadas, glumáceas; 12 mm de largo. **Flores** ca. 6, sucesivas, dísticas, amarillo verdosas a verdes o verde purpúreas; sin datos de fragancia. **Ovario** corto, terete, delgado, recto, no inflado, no ornamentado; 6-9 mm de largo. **Sépalos** libres, entreabiertos, glabros, oblongo elípticos, redondeados, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido, entero; 6.5-10 x 2.9-3.1 mm; los **laterales** con una quilla dorsal baja. **Pétalos** libres, entreabiertos, oblicuamente elípticos, redondeados, 3-nervados, las nervaduras laterales ramificadas en la mitad apical, margen extendido, entero; 6.3-10 x 3-4 mm. **Labelo** unido a la columna, conduplicado en posición natural, entero, suborbicular cordado, obtuso en el ápice, margen entero; 7.5-10 x 7-8 mm; bicalloso, los callos delgados, bajos; disco con 3 quillas, lisas, delgadas, bajas, la central alargada hasta el ápice de la lámina; el par lateral mucho más corto. **Columna** recta, corta, gruesa; 3 mm de largo. **Clinandrio** reducido, margen entero. **Antera** no vista. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** sin penetrar el ovario, no inflado, no ornamentado. **Cápsula** no vista.

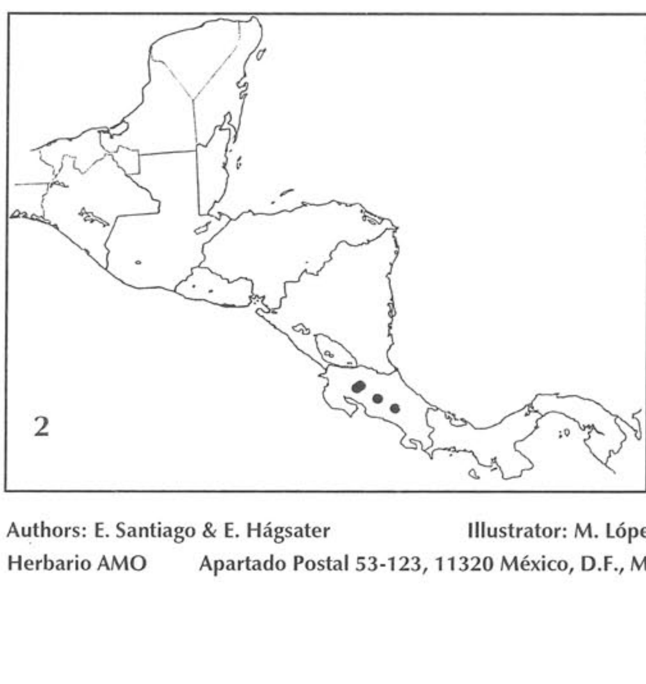
Epiphytic, sympodial, straggling, suberect **herb**, with successive lateral growths. **Roots** distributed along the basal internodes, scarce, thin. **Stems** simple, cane-like, terete, thin, straight at the base, somewhat flexuous towards the apex; the basal half covered with tubular, scarious sheaths, becoming fibrous with time. **Leaves** 5, aggregated towards the apical half of the stem, alternate, articulate, the basal leaf smaller; sheaths tubular; blade narrowly elliptic-lanceolate, acute, coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, arching, short, dense-flowered; peduncle totally hidden by 7 bracts similar to the floral bracts, narrowly ovate, subacute, conduplicate, imbricating, glumaceous. **Floral bracts** much longer than the ovaries, ovate, subacute, conduplicate, glumaceous. **Flowers** ca. 6, successive, distichous, greenish yellow, green to purple-green. **Sepals** free, partly spreading, glabrous, oblong-elliptic, rounded, 3-veined, the lateral veins branching from the base, so as to appear 5-veined, margin spreading, entire; **lateral sepals** with a low dorsal keel. **Petals** free, partly spreading, obliquely elliptic, apex rounded, 3-veined, the lateral veins branching along the apical half, margin spreading, entire. **Lip** united to the column, conduplicate in natural position, entire, suborbicular-cordate, apex obtuse, margin entire; bicallose, with 3 smooth, thin, low keels, the central keel elongate, reaching the apex of the lip, the lateral pair much shorter. **Column** straight, short, thick. **Clinandrium-hood** reduced, margin entire.

OTHER SPECIMENS: COSTA RICA: Alajuela: La Palma de San Ramón, 27 X 1924, *Brenes 1083*, NY! **Puntarenas:** Monteverde, Río Veracruz, 1500 m, 9 I 1990, *Bello 1728*, INB! (Illustration voucher.) MO! Monteverde Cloud Forest Reserve, 1500-1600 m, 8 XI 1986, *Haber 6226*, MO! Ibid. *Haber 6227*, MO! **PANAMA: Chiriquí:** Cerro Hornito, 1750-1900 m, 22 IX 1987, *Croat 67942*, MO! SEL! Ibid. 27 XII 1977, *Folsom 7233*, MO! Cerro Colorado, 1670 m, 15 II 1985, *Luer 10542*, MO!

DISTRIBUTION AND ECOLOGY: Costa Rica and western Panama, at 1500-1750 m altitude. Flowering in November to February.

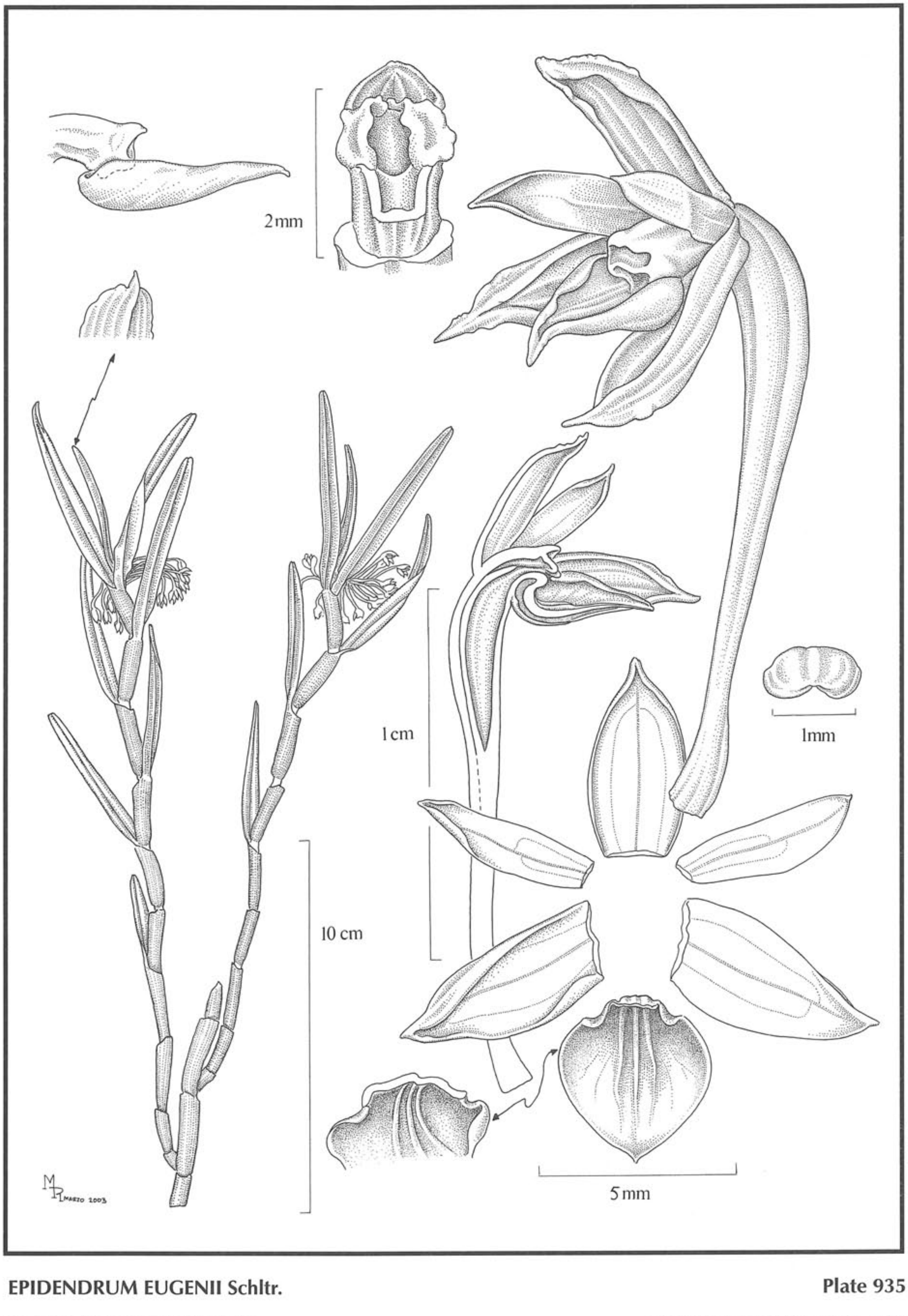
RECOGNITION: *Epidendrum estrellense* belongs to the Polychlamys Group, Polychlamys Subgroup which is characterized by the successive lateral growths, the distichous, apical inflorescence with prominent, conduplicate, acute, glumaceous floral bracts. The species is distinguished by the thin stems, somewhat flexuous towards the apex, with elliptic-lanceolate, acute leaves, a dense inflorescence with 7 imbricating bracts covering the peduncle; successive, small, greenish yellow to green purple flowers, the partly spreading sepals 6.5-10 mm long, and the lip suborbicular-cordate. *Epidendrum barbae* Rchb. f. has thin, straight, stems, linear-lanceolate, acute leaves, a lax-flowered inflorescence without bracts on the peduncle, and the rachis zigzag, simultaneous flowers with the ovary inflated, forming a prominent vesicle.

CONSERVATION STATUS: DD. Data deficient.



ETYMOLOGY: The epithet refers to the locality of "La Estrella", Cartago, Costa Rica, where Charles H. Lankester collected numerous orchids.

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EPIDENDRUM EUGENII Schltr.

Plate 935

EPIDENDRUM EUGENII Schltr. Repert. Spec. Nov. Regni Veg. Beih. 7: 132. 1920.

Type: COLOMBIA: Cauca: Santa Ana, 2800 m, 3 December 1899, ***Eugène Langlassé 100***. Holotype: B, destroyed. Lectotype: K! Designated by Christenson, Lindleyana 11(1): 15. 1996. Isotypes: AMES! P x2! G x2! US! (Illustration voucher.) Photo of type (G) at AMES! F, SEL!

Synonym: *Epidendrum nubigenum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 69. 1924. Type: COLOMBIA: [Cauca:] on the Galeras Volcano near Pasto, 4300 m, ***W. Hopp 28***. Holotype: B, destroyed.

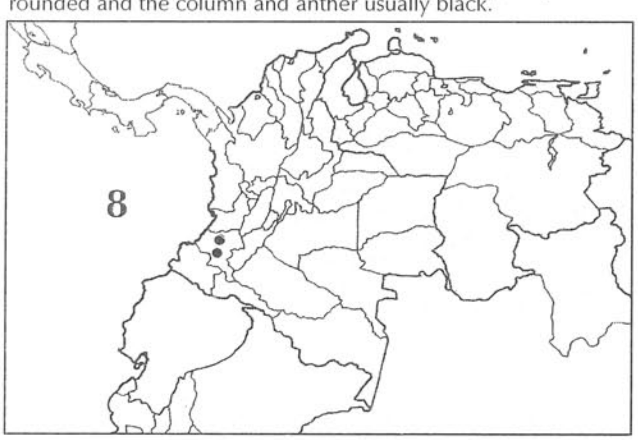
Hierba epífita, monopodial, ramificada, de más de 24 cm de alto. **Raíces** basales, raramente muy escasas en algunas ramificaciones, carnosas, delgadas. **Tallos** ramificados hacia el ápice, las ramificaciones producidas generalmente de los entrenudos apicales del tallo anterior, tipo caña, teretes, algunas ligeramente flexuosas; el tallo inicial ca. 10 x 0.35 cm; las ramificaciones, 4-15.5 x 0.25-0.4 cm. **Hojas** en el tallo inicial no vistas, 4-9 en las ramificaciones, distribuidas en los 2/3 apicales, coriáceas, alternas, generalmente caedizas, 4-6 persistentes hacia el ápice de cada rama; vaina tubular, finamente estriada y rugosa, 14-20 x 2.5-4 mm; lámina angostamente lanceolado oblonga, ápice obtuso, diminutamente apiculado, margen entero, lisa, 2.5-5.8[7.3] x 0.35-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, corta, racemosa, nutante, densa, multiflora, subsésil, florece una sola vez, 2 cm de largo; pedúnculo muy corto, terete, delgado, desprovisto de brácteas, 3 mm de largo; raquis terete, delgado, 9 mm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente lanceoladas, largamente acuminadas, abrazadoras, 4.5 mm de largo. **Flores** 20-25, simultáneas, de color violeta, el labelo con mancha amarilla; sin datos de fragancia. **Ovario** terete, delgado, liso, ligeramente inflado ventralmente en el 1/3 apical, el ápice arqueado hacia debajo de manera que el ápice de la columna queda a un ángulo de 90° respecto del eje del ovario, 9-15 mm de largo. **Sépalos** entreabiertos, libres, oblongo elípticos, ápice agudo, con una quilla dorsal erosa, 3-nervados, margen entero, 5.3-5.7 x 2.6-2.8 mm. **Pétalos** entreabiertos, libres, linear oblongos, subagudos, 3-nervados, las nervaduras laterales cortas, margen entero, 4.5 x 1.5 mm. **Labelo** unido a la mitad basal de la columna, entero, ovado, subagudo, base subcordada, margen entero, 3-3.8 x 2.6-3.6 mm; provisto de 3 quillas, lisas, bajas, subagudas, paralelas, desvaneciéndose hacia la zona media apical del labelo; en la base el labelo forma un mentón al estar doblado hacia abajo y hacia atrás antes del ápice de la columna. **Columna** arqueada, gruesa, corta, bidentada, los dientes subagudos, 2 mm de largo. **Clinandrio** corto, entero. **Antera** no vista. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando 1/3 del ovario, inflado, liso. **Cápsula** no vista.

Epiphytic, monopodial, branching, **herb. Roots** at the base of the plant, rarely and scarce above, fleshy, thin. **Stem** branching towards the apex, cane-like, terete, somewhat flexuous. **Leaves** 4-9 on the branches, distributed throughout the apical 2/3 of the stems, coriaceous, generally only the apical ones persistent; sheath tubular, minutely striated and rugose; blade narrowly lanceolate-oblong, apex obtuse, smooth, minutely apiculate, margin entire. **Inflorescence** apical, short, racemose, nutant, densely many-flowered, subsessile, flowering only once; peduncle very short, terete, thin. **Floral bracts** much shorter than the ovary, narrowly lanceolate, long acuminate. **Flowers** 20-25, simultaneous, violet, the lip with a yellow spot. **Ovary** terete, thin, smooth, slightly inflated ventrally at the apical 1/3, arched downwards so that the apex of the column is at a 90° angle with respect to the axis of the ovary. **Sepals** partly spreading, free, oblong-elliptic, apex acute, with a dorsal, erose keel, 3-veined, margin entire. **Petals** partly spreading, free, linear-oblong, subacute, 3-veined, the lateral veins short, margin entire. **Lip** united to the basal half of the column, entire, ovate, subacute, subcordate, margin entire; provided with 3, smooth, low, subacute, parallel keels which disappear towards the apex of the lip; at the base, the lip forms a sac as it is bent down and backwards before the apex of the column. **Column** arched, thick, short, with a pair of apical, subacute teeth. **Clinandrium-hood** short, entire. **Rostellum** apical slit. **Nectary** penetrating 1/3 of the ovary, inflated, smooth.

OTHER SPECIMENS: COLOMBIA: Cauca: Headwaters of Río López, Río Palo basin, Tierra Adentro, 2500-3000 m, I 1906, *Pittier 1092*, AMES! US!

DISTRIBUTION AND ECOLOGY: Southern Colombia, at around 2500-4300 m altitude. Flowering in December to January.

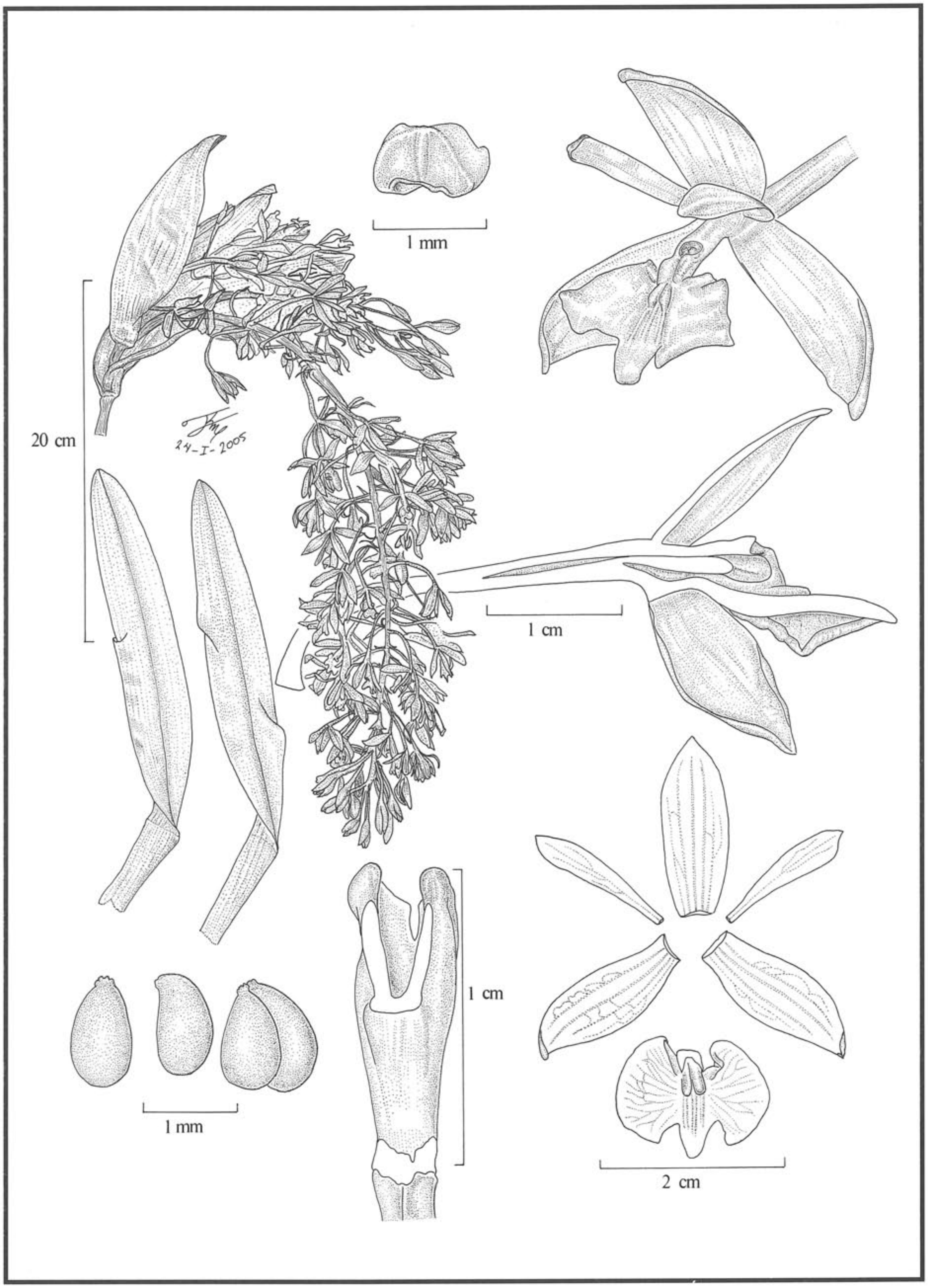
RECOGNITION: *Epidendrum eugenii* belongs to the Diothonea Group, Gastropodium Subgroup, caracterized by the branching habit, linear-lanceolate to lanceolate, apically bilobed leaves, arching-nutant, racemose inflorescence, membranaceous or rarely fleshy flowers, the lip entire to 3-lobed, with an erose margin, ecallose, without or with 1-10 thin, smooth to erose keels, the column united to the lip from totally to obliquely to free; the Subgroup which has small, usually brightly colored flowers pink to purple flowers, a very short inflorescence, lip more or less cordiform, united to the basal half of the column, the column ending in fleshy-thickened lobes. This species is recognized by the resupinate, violet flowers with a yellow disc of the lip which is entire, ovate, with three parallel keels running down the middle and without any cushion at the base. It closely resembles *Epidendrum gastropodium* Rchb. f. which has similarly colored flowers, but is distinguished by the cushion at the base of the lip terminating in three short keels. *Epidendrum melanogastropodium* Hágsater & Dodson is also similar, but does not have any keels on the lip, only the basal cushion, and the floral segments are generally wider and rounded and the column and anther usually black.



CONSERVATIONS STATUS: DD. Data deficient. Apparently common locally.

ETYMOLOGY: Named in honor of Eugène Langlassé, Belgian orchid collector who travelled in tropical America during the latter part of the 19th and early 20th centuries.

Authors: E.Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM FERREYRAE Hágsater & R.Fernández **Plate 936**

EPIDENDRUM FERREYRAE Hágsater et R.Fernández, *sp nov.*

Type: PERU: Amazonas: Chachapoyas: encima de Leimebamba, 3400 m, 17 abril 1964, ***Ramón Ferreyra 15527***. Holotype: USM 167258! Isotypes: AMO! (Illustration voucher). USM x3!

Epidendro lesteri Hágsater & Dodson simile sed ovariis longioribus, petalis latioribus subacutis cum vena ramosa in dimidio apicali, labello trilobato margine integro, lobulis lateralibus dolabriformibus, lobulo medio triangulari diminuto, labellum *Epidendro storkii* Ames simulanti, differens.

Hierba simpodial, cespitosa, epífita, suberecta, alta. **Raíces** basales, carnosas, gruesas. **Tallos** sencillos, tipo caña, teretes, gruesos, hasta 1.8 cm de grosor. **Hojas** varias, distribuidas en los 2/3 apicales del tallo, dísticas, extendidas, algunas recurvadas, coriáceas; vainas tubulares, estriadas, teñidas de rojizo, 3-9 x 0.9-1.8 cm; lámina angostamente lanceolada, aguda, con una quilla dorsal baja, verde en el haz a levemente teñida de rojizo en el ápice y el envés, lisa, margen entero, 20 x 3.7-4.3 cm. **Bráctea espatácea** 1, conduplicada, elíptica, subaguda, margen entero y ligeramente involuto, 16 x 5 cm. **Inflorescencia** apical, paniculada, pesada, los racimos muy densos, nutantes, 34 cm de largo; pedúnculo corto, terete, grueso, recto, 5 cm de largo; con una bráctea en la base de cada racimo, semejantes a la bráctea espatácea pero ligeramente menores, 10-13 x 5-6 cm; raquis grueso, terete, recto. **Brácteas florales** mucho más cortas que el ovario, linear triangulares, agudas, 3-18 mm de largo. **Flores** ca. 70 en el racimo mayor, los racimos laterales mucho menores, casi simultáneas, verdosas, fuertemente teñidas de púrpura; fragancia no registrada. **Ovario** largo, terete, delgado, no inflado, no ornamentado, 20-40 mm de largo. **Sépalos** libres, entreabiertos, elíptico oblongos, obtusos, diminutamente apiculados, 4-5-nervados, margen entero, 15-18 x 6-7 mm; los **laterales** ligeramente oblicuos. **Pétalos** libres, entreabiertos, oblanceolados, subagudos, 1-nervados, la nervadura ramificada arriba, ligeramente oblicuos, margen entero, 13-15 x 2.5-3 mm. **Labelo** unido a la columna, trilobado, base profundamente cordada, margen entero, 13 x 16 mm; bicalloso, los callos esféricos, pequeños; disco provisto de 3 quillas, romas, lisas, bajas; lóbulos laterales dolabriformes, 6 x 11 mm; lóbulo medio subtriangular, 3.5 x 3.0 mm. **Columna** recta, 10 mm de largo. **Clinandrio** recto, corto, margen entero. **Antera** reniforme, con una quilla baja al frente, 4-locular. **Polinios** 4, obovoideos, lateralmente comprimidos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** corto, penetrando levemente el ovario, delgado, no inflado, liso. **Cápsula** no vista.

Epiphytic, suberect, sympodial, caespitose **herb. Roots** basal, thick, fleshy. **Stems** simple, cane-like, terete, thick. **Leaves** several, distributed throughout the apical 2/3 of the stem, distichous, spreading, somewhat recurved, coriaceous; sheaths tubular, striated, reddish tinted; blade narrowly lanceolate, acute, with a low dorsal keel, dark green above, with the apex and underside reddish, smooth, margin entire. **Spathaceous bract** 1, conduplicate, elliptic, subacute, margin entire and slightly revolute. **Inflorescence** apical, paniculate, with heavy, dense-flowered, nutant racemes; peduncle, short, terete, thick, straight; with a large bract at the base of each raceme, similar to the spathaceous bract, but somewhat shorter; rachis terete. **Floral bracts** much shorter than the ovary, linear-triangular, acute. **Flowers** about 70 on the main raceme, fewer on the lateral racemes, simultaneous, greenish, strongly tinged with purple. **Ovary** long, terete, thin, smooth. **Sepals** free, partly spreading, elliptic-oblong, obtuse, minutely apiculate, 4-5-veined, margin entire; the lateral sepals slightly oblique. **Petals** free, partly spreading, oblanceolate, subacute, 1-veined, slightly oblique, margin entire, the veins branching above. **Lip** united to the column, 3-lobed, base deeply cordate, margin entire; bicallose, the calli spherical, small; disc provided with 3 low, smooth, rounded keels; lateral lobes dolabriform; midlobe subtriangular. **Column** straight. **Clinandrium-hood** straight, short, margin entire. **Anther** reniform, with a low keel in front, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** short, barely penetrating the ovary, smooth, narrow.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the Amazon slope of the Andes in the upper basin of the Marañón River in northern Peru, epiphytic in wet cloud forest, at 3400 m altitude. Flowering in April.

RECOGNITION: *Epidendrum ferreyrae* belongs to the Excisum Group and Subgroup which is characterized by the sympodial, caespitose habit, cane-like stems with numerous leaves, the inflorescence racemose or an open panicle with few branches, the 1-2 large spathes at the base of the inflorescence, the 3-lobed lip and medium sized flowers. The species is recognized by the tall stems, prominent, conduplicate spathaceous bract, with similar, though somewhat smaller bracts subtending the branches of the inflorescence, the greenish flowers, with the outer tepals more or less purple, the oblanceolate, subacute petals, and the 3-lobed lip with an entire margin, the lateral lobes dolabriform, and the much smaller midlobe subtriangular, reminiscent of the unrelated Costarican *E. storkii* Ames. It is very similar to *E. lesteri* Hágsater & Dodson which has lanceolate, acute, dark green leaves with the underside reddish, the pink-colored, obtuse spathe, the nutant, dense-flowered inflorescence branching near the base into several similar racemes, and the greenish, pale burgundy-red tinged flowers; the petals linear, the lateral lobes of the lip subreniform; midlobe rectangular, the apex truncate, somewhat bilobed, short-apiculate. It closely resembles *Epidendrum orthoclinium* Hágsater & Dodson which has narrower leaves, a more lax-flowered inflorescence, smaller, greenish yellow flowers, acute petals, and the clinandrium hood upturned, with the margin erose. *Epidendrum excisum* Lindl. has laterally flattened stems, an erect to arching, lax-flowered, paniculate inflorescence, the flowers light yellowish green more or less tinged with copper. *Epidendrum tenuispathum* C.Schweinf. has a somewhat similar habit, with an erect, paniculate inflorescence, and the lip wider than long.



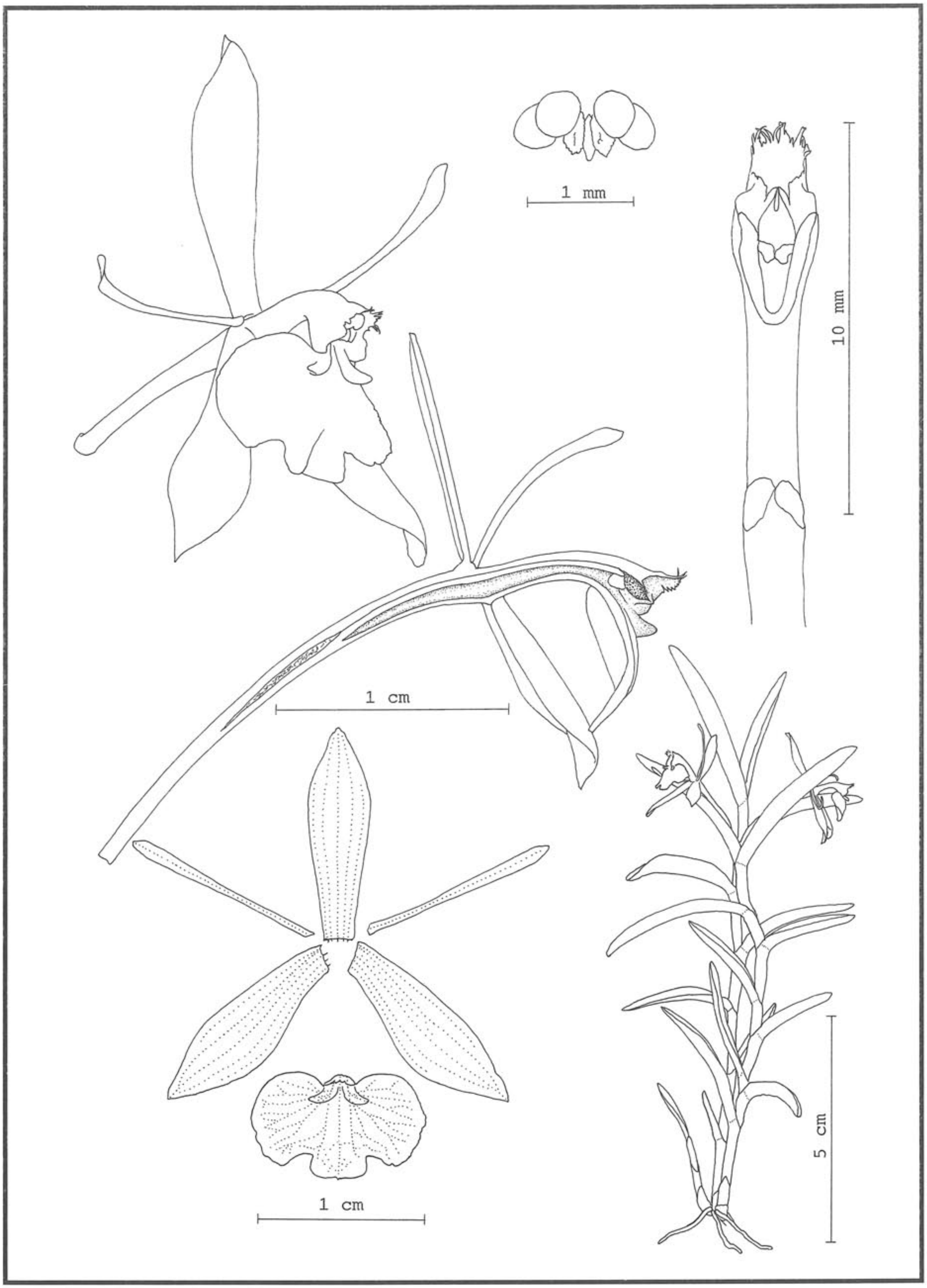
CONSERVATION STATUS: DD. Data deficient. Apparently very rare.

ETYMOLOGY: In honor of Ramón Ferreyra Huerta (1912-2005), founder and director (1961-1981) of the herbarium (USM) of the Universidad Nacional Mayor de San Marcos, in Lima, Perú, who collected the type and over 22,000 numbers during his lifetime, mainly in Peru. Numerous species and two genera in the Asteraceae, *Ferreyranthus* and *Ferreyrella* have been dedicated to him.

REFERENCES: Hágsater, E. & C. H. Dodson, *Epidendrum lesteri* Hágsater & Dodson. In E. Hágsater & L. Sánchez, eds., **Icones Orch. (Mexico City)** 7: pl. 754. 2004.

Author: E. Hágsater **Illustrator:** R. Jiménez M. **Editors:** E. Hágsater & L. Sánchez S.

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EPIDENDRUM FIRMUM Rchb.f.

Plate 937

EPIDENDRUM FIRMUM Rchb.f., Beitr. Orchid.-K. C. Amer. 87, 1866.

Type: COSTA RICA: Cartago, Naranjo, ***Wendland 1135.*** Holotype: W 42465! Tracing from the type: AMES 26883! AMES 26884!

Synonyms: *Epidendrum difforme* Jacq. var *firmum* (Rchb.f.) Ames, F.T.Hubb. & C.Schweinf., in Bot. Mus. Leafl. 2(4): 55. 1934. *Epidendrum majale* Schltr., Beih. Bot. Centralblatt. 36 (3): 406. 1918. Type: Costa Rica: Forêts des collines de San Ramón, 1500-1600 m, ***A. Tonduz s.n., CR 17620.*** Holotype: B (probably destroyed). Lectotype (here designated): US 861807! (Illustration of flower, AMO!) Isolectotypes: AMES 21993! F! BM! G! K! P! Z! Tracing from the holotype: AMES 26886!

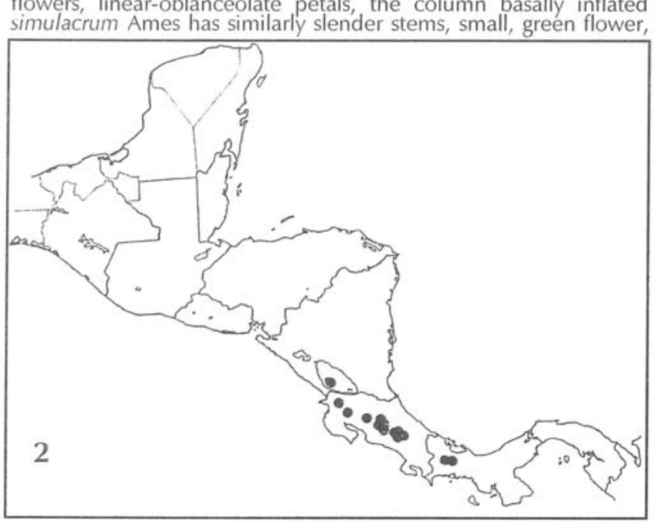
Hierba epífita, simpodial, cespitosa, 18-22 cm de alto. **Raíces** basales, filiformes, 0.7-1 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, rectos a ligeramente flexuosos, 14-20 x 0.2-0.3 cm. **Hojas** 7-13, distribuidas a lo largo del tallo, la apical es pequeña y envuelve la base de la inflorescencia; vaina lateralmente comprimida, lisa, 0.6-2.0 cm de largo; lámina angostamente lanceolada a ovado elíptica, ápice obtuso a emarginado, margen entero, lisa, coriácea, carina dorsal baja, verde clara, 1.7-4.5 x 0.6-1.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical en el tallo maduro, florece una sola vez, subcorimbosa, subsésil, pedúnculo muy reducido. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas, 2.5-3 x 2-2.5 mm. **Flores** 2-4, simultáneas, resupinadas, color verde claro, fragancia dulce, intensa, nocturna. **Ovario** no inflado, terete, no ornamentado, 21-27 x 0.5-1 mm. **Sépalos** extendidos, libres, obovados, ápice obtuso, 3-nervados, margen entero, revoluto, glabros, coriáceos, 13-14 x 4.5-6 mm. **Pétalos** entreabiertos, filiformes, obtusos, 1-nervados, margen entero, extendido, membranáceos, 13-14 mm x 0.7-1 mm. **Labelo** unido a la columna, trilobado, coriáceo, convexo, 8-12.5 x 9-14 mm; bicalloso, los callos prominentes y alargados muy divergentes entre sí, en forma de proyecciones carnosas, agudas; carinas ausentes o con una central y dos más cortas, bajas; lóbulos laterales más grandes que el medio, deflejados en posición natural, semiovados, margen sinuoso, 2.8-5 x 4.2-8.5 mm; lóbulo medio pequeño, subcuadrado a subrectangular, ligeramente emarginado, en ocasiones mucronado, 1.5-2.5 x 2.2-4.6 mm. **Columna** arqueada en el tercio apical a ligeramente arqueada, delgada, 10-12 x 1-1.6 mm. **Clinandrio** prominente, entero, margen fimbriado, 1.5-2 mm de largo. **Antera** transversalmente elipsoide, no ornamentada, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, poco más largas que los polinios; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, cerca de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario, no ornamentado. **Cápsula** elipsoide, 14-20 x 1.5-2 mm .

Epiphytic, sympodial, caespitose **herb. Roots** basal, filiform. **Stems** simple, cane-like, somewhat laterally compressed, straight to slightly flexuous. **Leaves** 7-13, distributed throughout the stem, the apical leaf smaller and enveloping the inflorescence, coriaceous, smooth, light green, with a low dorsal keel, margin spreading, entire. **Inflorescence** apical, from the mature stem, flowering only once, subcorymbose, subsessile, peduncle reduced. **Floral bracts** much shorter than the ovary, ovate, acute. **Flowers** 2-4, simultaneous, resupinate, light green; with nocturnal, intense, sweet, fragrance. **Sepals** spreading, free, obovate, apex obtuse, glabrous, coriaceous, 3-veined, margin revolute, entire. **Petals** partly spreading, filiform, obtuse, membranaceous, margin spreading, entire. **Lip** united to the column, 3-lobed, coriaceous, convex; bicallose, the calli prominent and elongate, very divergent, fleshy, acute; lateral lobes much larger than the midlobe, deflexed in natural position, semiovate, margin sinuose; midlobe small, subquadrate to subrectangular, slightly emarginate, sometimes mucronate. **Column** arching in the apical third to slightly arching, thin. **Clinandrium-hood** prominent, entire, margin fimbriate. **Anther** transversely ellipsoid, smooth, 4-celled. **Pollinia** 4, subequal, obovoid, laterally compressed; caudicles soft and granulose, somewhat longer than the pollinia; viscidium viscous, translucent. **Rostellum** subapical, slit. **Nectary** penetrating 1/4th of the ovary, smooth. **Capsule** ellipsoid.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from Nicaragua, Costa Rica and Panama. Epiphytic in rainforest from 600 to 2600 m altitude. Flowering from March to August.

RECOGNITION: *Epidendrum firmum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species is recognized by the slender, somewhat laterally compressed stems, narrow leaves, small, pale green, sweetly fragrant flowers, the filiform, 1-veined petals, 3-lobed lip with strongly divergent calli, and the arching column with a prominent, fimbriate clinandrium-hood. *Epidendrum lagenocolumn* Hágsater & L.Sánchez has larger and more vigorous plants with wider leaves, larger flowers, linear-oblanceolate petals, the column basally inflated and the clinandrium-hood erose-dentate. *Epidendrum simulacrum* Ames has similarly slender stems, small, green flower, sepals and petals reflexed, an entire, reniform-cordiform lip with subglobose calli, and a very arched column, to 90°, with a short, erose clinandrium-hood.



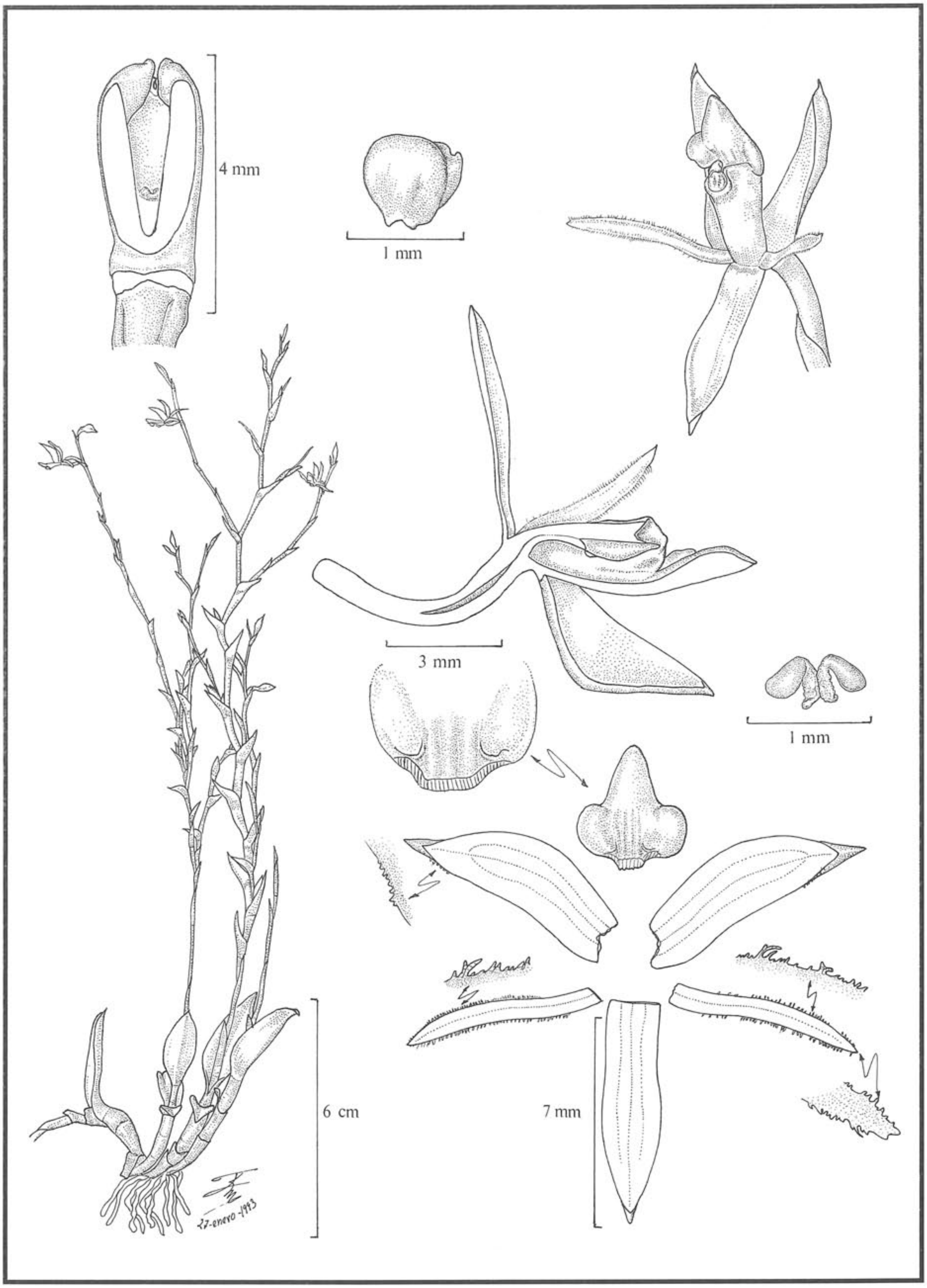
CONSERVATION STATUS: DD. Data deficient. Fairly common in Costa Rica.

ETYMOLOGY: From the Latin *firmus*, solid, resistant; if reference to the graceful but firm stems of the species.

REFERENCES: Ames, O., F. Tracy Hubbard & C. Schweinfurth. 1934. Three polymorphic alliances in *Epidendrum*. **Bot. Mus. Leafl.** 2(4): 41-72. Cambridge, Massachusetts. Ames, O., F. Tracy Hubbard & C. Schweinfurth. 1936. **The Genus *Epidendrum* in the United States and Middle America**. pp 90-93. Hammel, B. E., et al. 2003, ***Manual de Plantas de Costa Rica*** 3: 114. Missouri Botanical Garden Press.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM FLEXUOECALLOSUM Hágsater & E.Santiago **Plate 938**

EPIDENDRUM FLEXUOECALLOSUM Hágsater et E.Santiago, *sp. nov.*

Type: ECUADOR: Esmeraldas: Along road under construction from Lita Alto Tambo (21 kms), collected from trees cut along roadside from km 13 to 20, 750-850 m, 19 V 1987, ***Calaway H. Dodson 17137, H. van der Werff & W. Palacios.*** Holotype: QCNE! Isotypes: AMES! AMO! COL! K! RPSC!

Epidendro flexuosissimo C.Schweinf. simile sed caulibus longioribus cum 3-6 foliis secus eos distributis, foliis elliptico-lanceolatis acutis, pedunculo recto, labello ecalloso duo cuniculos parvos ad laminae basem ferenti, divergens.

Hierba epífita, simpodial, cespitosa, de 12-24 cm de alto. **Raíces** basales, escasas, carnosas, delgadas, blancas, 0.4-0.8 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos, [2.5-3] 4-6.5 x 0.1-0.3 cm; cubiertos en la base por 1 o 2 vainas tubulares, (algo infladas en el ápice) agudas, no foliares, 5-11 x 3.2-5.3 mm. **Hojas** 3-6, distribuidas a lo largo del tallo, articuladas, alternas, erecto extendidas, desiguales en tamaño, la basal muy pequeña; vainas tubulares, algo infladas en el ápice sin llegar a ser infundibuliformes, finamente estriadas, 4-15 x 2.4-6 mm; lámina coriácea, elíptico lanceolada, aguda, con una quilla dorsal diminuta, algo erosa, margen entero, extendido, 0.5-5.5 x 0.4-1.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, generalmente florece una sola vez, paniculada (muy raramente racemosa), erecta, dística, [6]10.5-19 cm de largo; provista de 2 a 9 ramas, paucifloras, laxas, suberectas, 1.5-6 cm de largo; cada rama con una bráctea basal angostamente triangular, aguda a acuminada, conduplicada y abrazadora, 3-13 mm de largo; pedúnculo delgado, lateralmente aplanado, bialado, recto, 2.5-6.6 [10] cm de largo; provisto de 2-7 brácteas prominentes, triangulares, agudas a cortamente acuminadas, eroso-dentadas, conduplicadas, amplexicaules, 6-16 mm de largo; raquis lateralmente aplanado en la base a filiforme en el ápice, recto a ligeramente sinuoso, 4-14 cm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, acuminadas, abrazadoras, 1.5-3 mm de largo. **Flores** [4]9-25, 1 a 5 por rama, simultáneas, no resupinadas, dísticas, de color verde, en ocasiones verde amarillento, fragancia ligera a té de limón (*Andropogon citratum* (DC.) Staff.). **Ovario** terete, delgado, en ocasiones ligeramente arqueado, no inflado, liso, 6-9 mm de largo. **Sépalos** entreabiertos (ocasionalmente el sépalo dorsal algo reflexo), libres, oblongo elípticos, cortamente acuminados, aristados, dorsalmente lisos, 3-nervados, las nervaduras laterales generalmente unidas en el ápice a la nervadura central, margen extendido, 6-8.3 x 1.8-2.2 mm; los **laterales** ligeramente falcados, margen superior diminutamente papiloso en el ápice. **Pétalos** entreabiertos, libres, lineares, agudos, 1-nervados, ligeramente falcados, margen extendido, densamente ciliado, cada cilio septado, raramente furcado, 5-7 x 0.6 mm. **Labelo** unido a la columna, 3-lobado, base truncada, margen entero, 2.5-3.7 x 2.2-3.7 mm; ecalloso, con 2 pequeños cunículos en la base de la lámina, ocultos por el ápice de la columna; disco con algunas venas engrosadas incipientes; lóbulos laterales hemielípticos, redondeados, algo carnosos, 6-9 x 1.1-1.6 mm; lóbulo medio triangular, subagudo, muy carnoso, 1.3-2.1 x 1.8-2 mm. **Columna** delgada, recta, 3-4 mm de largo. **Clinandrio** corto, margen entero. **Antera** anchamente ovoidea, bidentada en el ápice, 2-locular. **Polinios** 2, obovoides; caudículas suaves y granulosas, casi tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños. **Nectario** sin penetrar el perianto, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, scarce, thin. **Stems** simple, cane-like, terete, thin, straight, erect; covered at the base by 1-2 tubular sheaths, somewhat inflated at the apex, acute, non foliaceous. **Leaves** 3-6, distributed throughout the stems, articulate, alternate, erect-spreading, unequal in size, the basal one smaller; sheaths tubular, somewhat inflated toward the apex, minutely striated; blade coriaceous, elliptic-lanceolate, acute, with a minute dorsal keel, somewhat erose, margin entire, spreading. **Inflorescence** apical, from the mature stem, generally flowering only once, paniculate (very rarely racemose), erect, distichous, provided with 2-9, few-flowered, lax, suberect branches, each branch with a narrowly triangular, acute to acuminate, conduplicate bract; peduncle thin, laterally compressed, two-winged, straight, provided with 2-7 prominent, triangular, acute to acuminate, erose-dentate, conduplicate bracts; rachis laterally compressed a the base, filiform above, straight to slightly sinuous. **Floral bracts** much shorter than the ovary, triangular, acuminate. **Flowers** [4]9-25, simultaneous, non-resupinate, distichous, green to yellowish green, fragrant of lemon grass (*Andropogon citratum* (DC.) Staff.). **Ovary** terete, thin, sometimes slightly arching, not inflated, smooth. **Sepals** partly spreading (occasionally the dorsal sepal somewhat reflexed), free, oblong-elliptic, short-acuminate, aristate, dorsally smooth, 3-veined, the lateral veins generally united at the apex to the mid-vein, margin spreading, entire; the lateral sepals slightly falcate, upper margin minutely papillose towards the apex. **Petals** partly spreading, free, linear, acute, 1-veined, slightly falcate, margin spreading, densely ciliate, each cilium septate, rarely furcate. **Lip** united to the column, 3-lobed, base truncate, margin entire; ecallose, with two short cunicula at the base of the blade, hidden under the apex of the column; disc with somewhat thickened veins; lateral lobes hemielliptic, rounded, somewhat fleshy; midlobe triangular, subacute, very fleshy. **Column** thin, straight. **Clinandrium-hood** short, margin entire. **Anther** widely ovoid, the apex bidentate, 2-celled. **Pollinia** 2, obovoid; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: ECUADOR: Esmeraldas: Lita, 520 m, 11 VII 1990, *Hágsater 10658*, AMO! Ibid. 26 II 1993, AMO! (Illustration voucher.) km 12-25, Lita, 800 m, *Hirtz 3288*, MO! Ibid. *Hirtz 3614*, MO! **Imbabura:** Santa Rosa de Cachaco, 1150 m, 19 I 1987, *Dodson 16895*, MO! Cachaco, 1400 m, 15 VIII 1986, *Hirtz 2943*, MO! **COLOMBIA: Chocó:** Cerro del Cuchillo, 520 m, 13 IX 1987, *Cardenas 457*, MO! **Nariño:** La Tulpa, 1200 m, 16 VII 1879, *Lehmann s.n.*, W!

OTHER RECORDS: COLOMBIA: Chocó: Bahía Solano, *Misas 51*, xerox of illustration, AMO!

DISTRIBUTION AND ECOLOGY: Ranging from the basin of the Río Atrato and along the Pacific slope of the Chocó to northwestern Ecuador, in pluvial forest to extremely wet cloud forest, at 500-1400 m altitude. Flowering from January to August.

RECOGNITION: *Epidendrum flexuoecallosum* belongs to the Lanium Group which is characterized by rhizomatous plants, the stems cane-like to pseudobublous, leaves generally aggregate towards the apex, flowers non-resupinate, more or less pubescent, pollinia 2 or 4. The species is recognized by the [2.5-3]4-6.5 cm long stems with 3-6 leaves distributed throughout, the leaves elliptic-lanceolate, acute, a paniculate inflorescence with the peduncle and rachis nearly straight, spreading, linear petals with the margin densely ciliate, and an ecallose lip, with two short cunicula at the base of the blade. *Epidendrum flexuosissimum* from Central Panama has shorter stems (1-3.5 [5] cm tall) with 2 [3] ovate-orbicular (rarely narrowly elliptic), spreading leaves, the peduncle and rachis of the inflorescence zigzag, and the lip bicallose, each callus bidentate. *Epidendrum ciliipetalum* (Garay) Hágsater & E.Santiago from the páramos east of Medellín, Colombia, has longer stems with 7 cm long, two apical, narrowly ovate-oblong, subacute and conduplicate leaves, the inflorescence with a single branch, reflexed sepals and petals, the lip bicallose, the apex of each callus forming 3 small lobes.

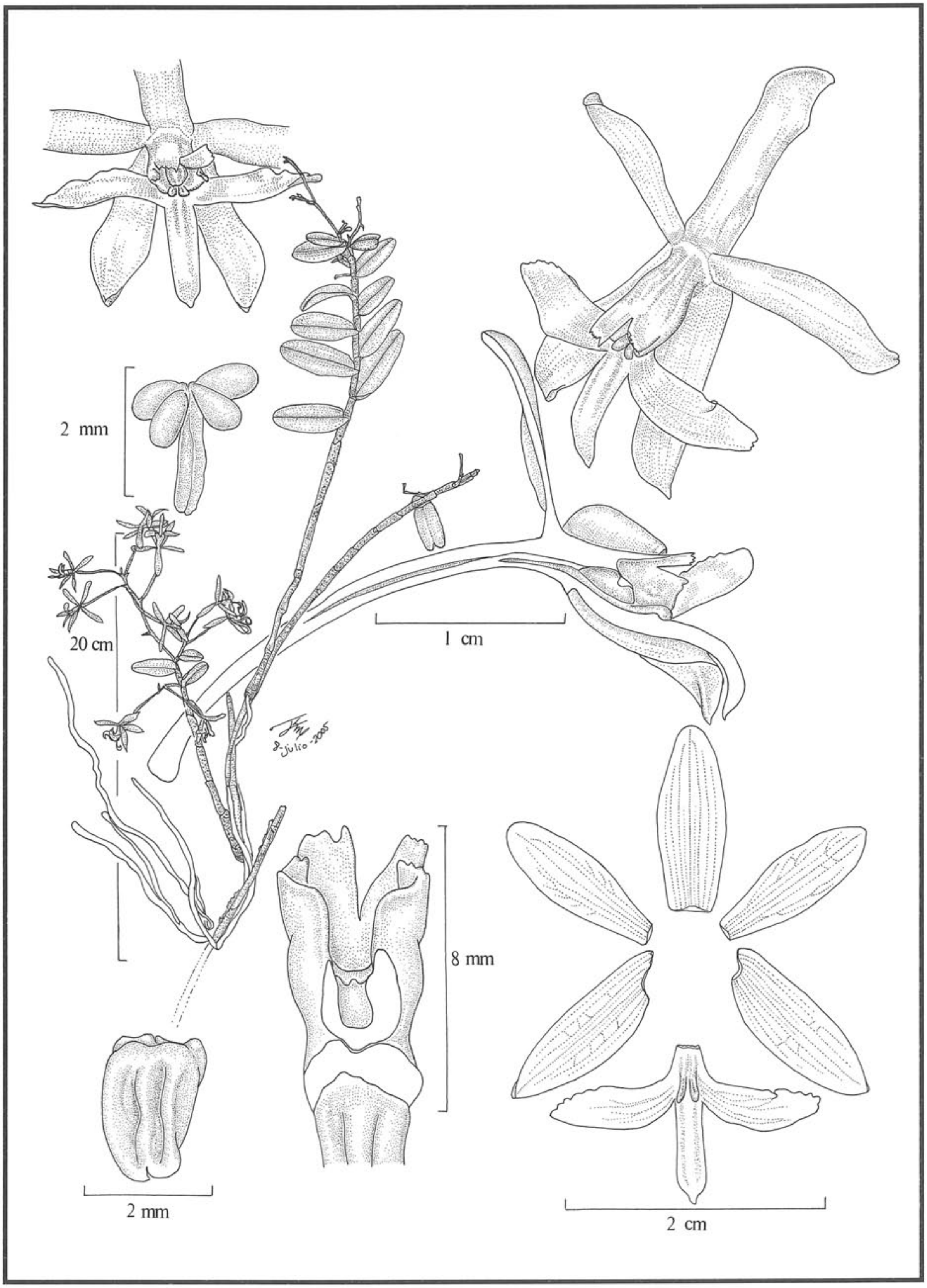


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *flexuosum*, zigzag, bent alternatively in opposite directions, the prefix ex- without, lacking, and *callosus*, callose, bearing a hardened thickening; in reference to the similarity of this species to *E. flexuosissimum* but lacking the bidentate calli of that species.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM FUSCINUM (Dressler) Hágsater **Plate 939**

EPIDENDRUM FUSCINUM (Dressler) Hágsater, Lankesteriana 5(1): 73. 2005.

Type: PANAMÁ: Coclé: Purchased in market, El Valle de Antón, said to be from mountains north of El Valle; 22, 29 March, 1981, ***Robert L. Dressler 6010***. Holotype: US! Isotypes: AMO MO x2! PMA

Basionym: *Oerstedella fuscina* Dressler, Orquídea (Mexico City) 8(2): 347. 1982.

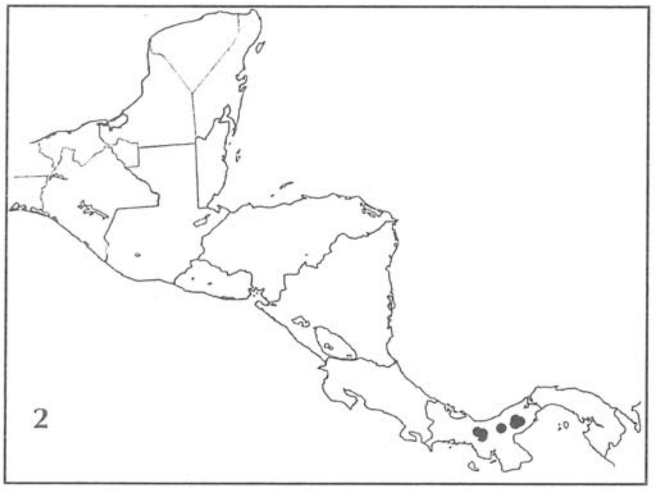
Hierba epífita, cespitosa, simpodial; 12-60 cm de alto. **Raíces** basales en el tallo inicial y en la base de cada tallo nuevo, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, originándose de la zona basal de tallos anteriores, tipo caña, teretes, delgados, erectos, rectos; 10-55 x 0.15-0.25 cm; cubiertos en la base por vainas tubulares, no foliares, verrugosas, fibrosas con el tiempo; 12-24 mm de largo. **Hojas** 6-12, distribuidas en la mitad apical del tallo, alternas, articuladas, las inferiores caedizas; vaina tubular, fuertemente verrugosa, las verrugas teñidas de rojo pardo; 8-20 x 1.5-3.2 mm; lámina ovada a ovada elíptica, ápice obtuso, generalmente bilobado, margen entero; 3-6.5 x 1.9-2.3 cm. **Bráctea espatácea** ausente. **Inflorescencias** apical y laterales (la apical generalmente paniculada; las laterales racemosas), distribuidas en la zona apical del tallo, de la base de las vainas foliares, paucifloras, laxas, 2-8 cm de largo; pedúnculo terete, delgado; 5-15 mm de largo, desprovisto de brácteas. **Brácteas florales** mucho más cortas que el ovario, ovado triangulares, agudas, abrazadoras, 2-4 mm de largo. **Ovario** terete, delgado, liso, no inflado, 20-28 mm de largo. **Flores** 12-17, 2-6 por racimo, simultáneas, resupinadas; sépalos y pétalos verde muy pálido, tornándose amarillos con el tiempo, columna y labelo blanco, callo amarillo; fragantes durante el día. **Sépalos** extendidos, libres, elípticos u oblongo elípticos, redondeados o agudos, 9-nervados, margen entero; 13-15 x 4-5 mm. **Pétalos** extendidos, libres, elípticos a oblanceolados, obtusos, 5-nervados, las nervaduras laterales cortamente ramificadas a todo lo largo, margen entero; 13-14 x 4-4.5 mm. **Labelo** unido a la columna, trilobado; 10 x 18 mm; bicalloso, los callos delgados; lóbulos laterales, oblongos, obtusos, oblícuos, perpendiculares al eje del labelo, margen apical oblicuo, el basal crenado; 7-10 x 3-3.5 mm; lóbulo medio linear, agudo, margen entero; 8-11 x 1.5-2 mm. **Columna** recta, delgada, 8 mm de largo, terminada en 4 lóbulos subcuadrados, truncados, con el margen eroso. **Clinandrio** largo, bilobado, margen eroso. **Antera** carnosa, amarilla con un punto morado dorsalmente, 4-locular. **Polinios** 4, obovoides, lateralmente compirmidos; caudículas delgadas, del doble de largo de los polinios; sin viscidio. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Nectario** corto, apenas penetrando el ovario, delgado, liso. **Cápsula** no vista.

Epiphytic, caespitose, sympodial **herb. Roots** basal, fleshy, thick. **Stems** simple, originating from near the base of the previous stem, cane-like, terete, thin, erect, straight; the basal half covered by non-foliaceous, verrucose, tubular sheaths, turning fibrous with time. **Leaves** 6-12, distributed throughout the apical half of the stem, alternate, articulate, the lower ones deciduous; sheath tubular, strongly verrucose, the warts tinted red-brown; blade ovate to ovate-elliptic, apex obtuse, generally bilobed, margin entire. **Inflorescences** apical and lateral (the apical one generally paniculate, the laterals racemose), distributed along the apical internodes of the stem, from the base of the leaf-sheaths, lax, few-flowered; peduncle terete, thin, short. **Floral bracts** much shorter than the ovary, triangular-ovate, acute. **Ovary** terete, thin, smooth. **Flowers** 12-17, 2-6 per raceme, simultaneous, resupinate; sepals and petals pale green, turning yellow with time, column and lip white, callus yellow; fragrant during daytime. **Sepals** spreading, free, elliptic to oblong-elliptic, rounded or acute, 9-veined, margin entire. **Petals** spreading, free, elliptic to oblanceolate, obtuse, 5-veined, the lateral veins short branched throughout, margin entire. **Lip** united to the column, 3-lobed, truncate; bicallose the calli thin; lateral lobes oblong, obtuse, oblique, perpendicular to the axis of the lip, apical margin oblique, the basal margin crenate; midlobe linear, acute, margin entire, about as long as the lateral lobes but narrower. **Column** straight, thin, ending in 4 subquadrate, truncate lobes. **Clinandrium-hood** long, bilobed, margin erose. **Anther** fleshy, yellow with a purple dot dorsally, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles long and narrow, granulose; without any viscidium. **Rostellum** perpendicular to the axis of the column, forming a wide sinus. **Nectary** very short, barely penetrating the ovary, narrow, smooth.

OTHER SPECIMENS: PANAMÁ: Coclé: El Petroso, ca. 800 m, 9 IV 1977, *D´Arcy 11339*, MO! Cerro Gaital, N of El Valle, 800-900 m, 28 IV 1982, *Knapp 4900*, MO! El Valle de Antón, 800-1000 m, 1 III 2001, *Nuñez 177*, AMO! (Illustration voucher.) **Veraguas:** NW of Santa Fe, 2 km from Escuela Agricola Alto de Piedra, 28 III 1975, *Mori 5256*, MO! Ibid. *Mori 5284*, MO!

DISTRIBUTION AND ECOLOGY: Endemic to the Continental Divide in central Panama; epiphytic, at 800-1000 m altitude. Flowering in March and April.

RECOGNITION *Epidendrum fuscinum* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is perpendicular to the longitudinal axis of the column, forming a wide, open sinus and Intermixtum Subgroup which has small, membranaceous flowers with a petaloid, usually bifid clinandrium hood, and obovoid, laterally compressed pollinia with long, granulose caudicles. The species is recognized by the medium large, pale green flowers (sepals 13-15 mm), with the lip white, 3-lobed, the lateral lobes three times longer than wide, the midlobe linear, acute, flowering in March and April. *Epidendrum folsomii* Hágsater is very similar but has smaller flowers (sepals 9-10 mm), with ochre-colored sepals and petals, the lobes of the lip narrower and flowering from July to October. *Epidendrum intermixtum* Ames & C. Schweinf. has even smaller flowers (sepals 6-8.5 mm), pale green and white flowers, with the lateral lobes of the lip only twice as long as they are wide, the midlobe oblong-ovate, minutely apiculate, and a bifid clinandrium-hood. *Epidendrum chalcochronum* Hágsater has longer lateral inflorescences, with the flowers very similar to those of *E. intermixtum* but reddish olive-green, with an entire clinandrium.



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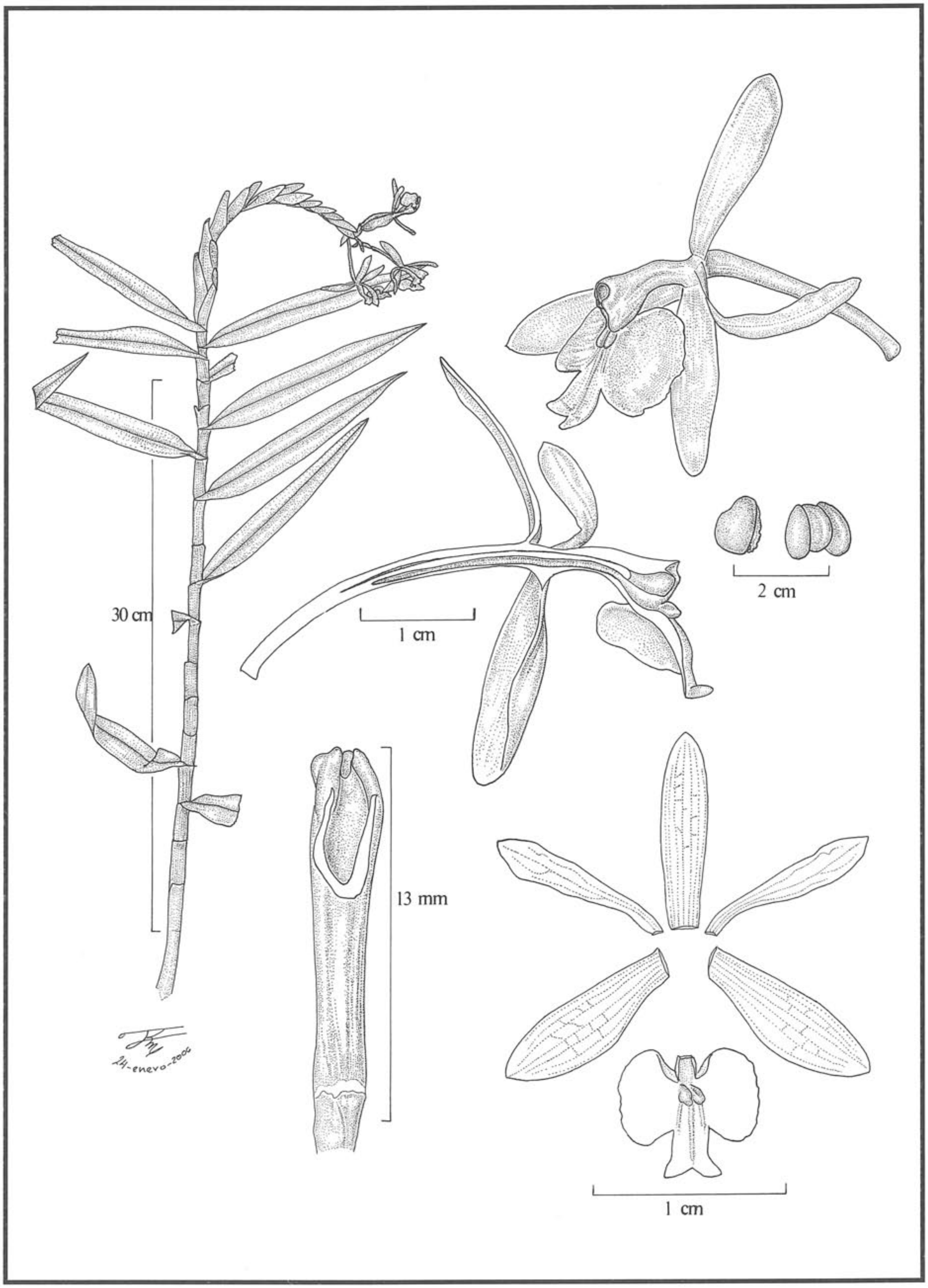
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *fuscina*, a three-pronged fork or trident, in reference to the 3-lobed lip; it is thus a noun rather than an adjective.

REFERENCES: Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama**, Cornell University Press, p. 89. Hágsater, E. & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. From *Oerstedella* Rchb.f., **Lankesteriana** 5(1): 73.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM GLORIA-IMPERATRIX Hágsater & G.Calatayud **Plate 940**

EPIDENDRUM GLORIA-IMPERATRIX Hágsater *et* G.Calatayud, *sp. nov.*

Type: PERU: Cajamarca: San Ignacio: Distrito San José de Lourdes: Crucero, 1250 m, 11 julio 2000, ***G. Calatayud Hermoza y J. Campos 543.*** Holotipo: USM! Isotipo: AMO! (Illustration voucher.) [cited as *Epidendrum sp.* in Calatayud, 2003.]

Epidendro cnemidophoro Rchb.f. simile sed foliis brevioribus angustiorisque, pedunculi bracteis obtusis breviorisque, floribus cremeis apicibus ex fuchsino suffusus, differt.

Hierba epífita y terrestre, cespitosa, simpodial, de aproximadamente de 120 cm de alto. **Raíces** basales, gruesas, 2 mm de grosor. **Tallos** tipo caña, erectos, rectos, producidos de la base del tallo anterior, de 107 cm de alto. **Hojas** numerosas (34), distribuidas a lo largo de los 2/3 apicales del tallo, dísticas, articuladas, erguido extendidas; vaina tubular, finamente estriada, 6-25 x 5-7.5 mm; lámina lanceolado elíptica, acuminada, conduplicada en la base, margen entero, extendido; 13.2-17.3 x 1.3-2.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, produciendo racimos sucesivos con los años, de entre las brácteas del pedúnculo; con un pedúnculo arqueado de unos 13 cm de largo, con 12-14 brácteas imbricadas, conduplicadas, el ápice redondeado a subagudo, cubriendo totalmente el pedúnculo de la inflorescencia, las brácteas hasta de 36 x 15 mm al extenderse; racimo laxifloro, corto, raquis 1 cm de largo, terete, delgado. **Brácteas florales** mucho más cortas que el ovario, ovadas, subagudas, 5-8 mm de largo. **Ovario** delgado, terete, 17-26 mm de largo. **Flores** 2-5, simultáneas, resupinadas, de color crema, ocasionalmente con los ápices fucsia y el labelo con puntos marrones (fide Campos); secan en negro; fragancia no registrada. **Sépalos** extendidos, carnoso coriaceos, libres, elíptico oblongos, obtuso redondeados, 7-nervados, margen entero, ligeramente revoluto, sépalos laterales ligeramente dolabriformes, oblicuos; 17-23.5 x 5-7 mm. **Pétalos** extendidos, libres, oblanceolados, obtusos, 2-3 nervados, margen entero, extendido; 17-22 x 3.5-4.0 mm. **Labelo** unido a la columna, 3-lobado, base cordada, carnoso coriaceo, margen eroso, 14-16 x 15-19 mm; bicalloso, seguidas por 3 quillas bajas y romas, la media llegando al seno apical del lóbulo medio, las laterales a la base del istmo; lóbulos laterales transversalmente elípticos, 5 x 9.5 mm, lóbulo medio rectangular con un seno poco profundo en medio, terminado en un par de lóbulos pequeños, divergentes, subtriangulares, subagudos, 5 x 6 mm. **Columna** delgada, larga, ligeramente arqueada hacia la mitad, dilatada hacia el ápice, 11-14 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales, caudículas granulosas, de largo semejante a los polinios. **Rostelo** apical, hendido. **Lóbulos laterales de la cavidad estigmática** no vistos. **Nectario** delgado, penetrando la mitad del ovario, no inflado, liso. **Cápsula** no vista.

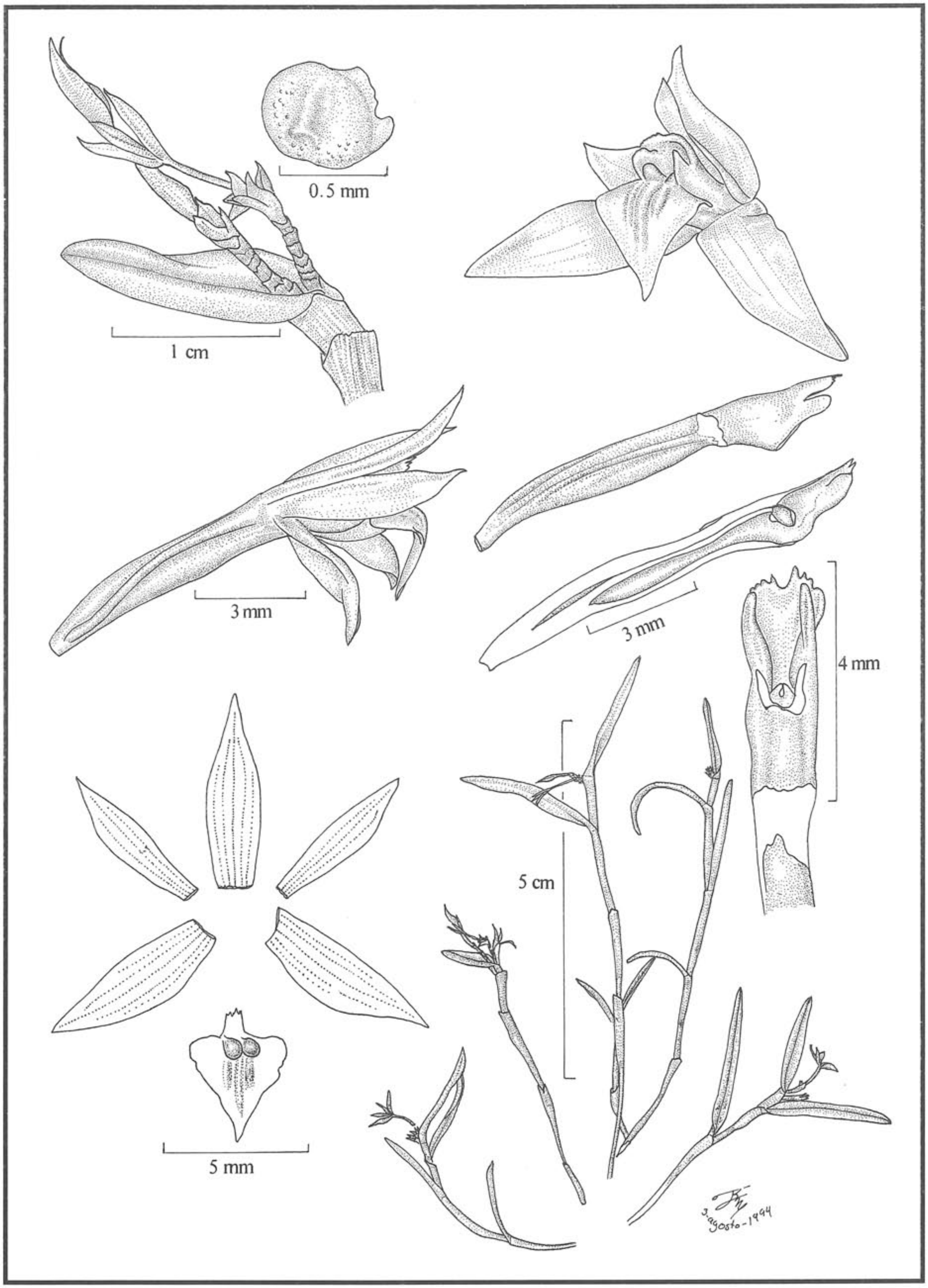
Tall, epiphytic and terrestrial, caespitose, sympodial **herb**. **Roots** basal, thick. **Stems** cane-like, erect, straight, produced from the base of the previous stem, tall. **Leaves** numerous (34), distributed throughout the apical 2/3 of the stems, distichous, articulate, erect-spreading; sheath tubular, minutely striated; blade lanceolate-elliptic, acuminate, conduplicate at the base, margin entire, spreading. **Inflorescence** apical, racemose, producing successive racemes year after year, from among the bracts of the peduncle; peduncle arching, totally covered by 12-14 imbricating, conduplicate bracts, the apex of the bracts subacute to rounded; raceme lax-flowered, short, rachis short, terete, thin. **Floral bracts** much shorter than the ovary, ovate, subacute. **Ovary** terete, thin, moderately long. **Flowers** 2-5, simultaneous, resupinate, cream-colored occasionally the apices fuchsia and the lip with brown dots (fide Campos); drying black. **Sepals** spreading, free, elliptic-oblong, obtuse-rounded, fleshy, ocriaceous, 7-veined, margin entire, slightly revolute, lateral sepals slightly dolabriform, oblique. **Petals** spreading, free, oblanceolate, obtuse, 2-3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, fleshy-coriaceous, margin erose; bicallose, followed by 3, low, rounded keels, the mid-keel reaching the apical sinus, the lateral keels reaching the base of the isthmus; lateral lobes transversely elliptic; midlobe rectangular ending in a pair of small, divergent subtriangular, subacute lobes, with a shallow sinus in the middle. **Column** thin, long, slightly arching in the middle, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal, caudicles granulose, as long as the pollinia. **Rostellum** apical, slit. **Nectary** thin, penetrating half of the ovary, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.
DISTRIBUTION AND ECOLOGY: Known only from northern Peru, from the State of Catamarca, Province of San Ignacio, just south of the border of Ecuador, in the basin of the Chinchipe River, an affluent of the Marañon, on the eastern slope of the Cordillera Occidental of the Andes, epiphytic or terrestrial at 1250-1800 m altitude. Flowering in July and August.
RECOGNITION: *Epidendrum gloria-imperatrix* belongs to the Cnemidophorum Subgroup of the Cristatum Group, recognized by the cane-like stems, numerous large, narrow leaves, apical inflorescence subtended by several large, acute, imbricating bracts, racemose, nutant inflorescence with fleshy flowers, the three-lobed lip with entire margins. The species is recognized by the narrow leaves (13-20 mm wide), the 12-14 rounded to subacute, imbricating bracts covering the peduncle of the lax-flowered (2-5) inflorescence, sepals 17-23.5 mm long, cream-colored occasionally with the apex tinged fuchsia, transversely elliptic lateral lobes of the lip, and the midlobe rectangular ending in a pair of divergent, subtriangular lobes. It is similar to *Epidendrum gualaquicense* Hágsater & Dodson which has leaves of similar width, green and white flowers, sepals 21 mm long and the midlobe of the lip obcuneate, shallowly sinuate at the apex, the corners rounded. *Epidendrum oraion* Hágsater from northern Colombia has very attractive, fuchsia and white colored flowers, the basal lobes semi-orbicular, and the lobes of the bilobed midlobe strongly divaricate, the leaves are 2-3 cm wide. The north mesoamerican *E. cnemidophorum* Rchb.f. is very similar overall, with very attractive, flowers, fuchsia marked with red-brown spots.



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CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: In honor of Gloria Emperatriz Hermoza de Calatayud (9 August 1942-31 May 2004), mother of the second author, who always enjoyed orchids, inspired and supported her in the field trips (Calatayud, 2005), and the preparation of her thesis (Calatayud, 2003), during which this species was collected.
REFERENCES: Calatayud, G., 2003. Taxonomía y diversidad de la familia Orchidaceae en 4 localidades de la provincia de San Ignacio; B. Sc. thesis, deposited in library of the Universidad de San Antonio Abad del Cusco, Peru. Calatayud, G., 2005. Diversidad de la familia Orchidaceae en los bosques montanos de San Ignacio (Cajamarca, Perú). ***Rev. per. biol.* 12(2): 309-316.**



EPIDENDRUM GLOSSOCLINIUM Hágsater & Dodson Plate 941

EPIDENDRUM GLOSSOCLINIUM Hágsater et Dodson, *sp. nov.*

Type: ECUADOR: Carchi: El Pailón, ca. 45 km below Maldonado along foot path to Tobar Donoso, wet mountain forest, 800 m, 2 December 1979, ***M.T. Madison & L. Besse 7251***. Holotype: QCA! Isotype. SEL! (Illustration voucher.)

Epidendro. dactyloclinio Hágsater & Dodson simile sed statura minore, pedunculo brevi tereti bracteis pluribus tecto, tepalis semiapertis, callis subglobosis, labello acuminato, clinandrii lobulis lateralibus oblongis obtusisque, recedens.

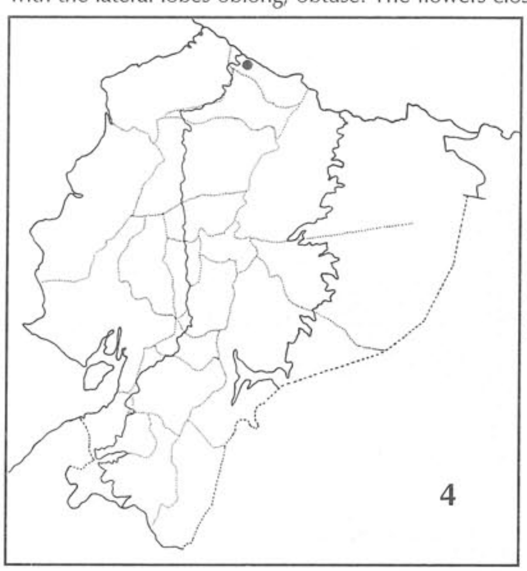
Hierba epífita, erecta, simpodial, cortamente rastrera, hasta de 20 cm de alto. **Raíces** de algunos entrenudos basales. **Tallos** sencillos, tipo caña, teretes en la parte basal, arriba lateralmente aplanados, 6-12 x 0.1-0.3 cm. **Hojas** 3-4, distribuidas en la mitad apical de los tallos, alternas, articuladas, subcoriáceas; vainas tubulares, ancipitosas, estriadas cuando secas, las inferiores no foliosas, 0.8-2.3 cm de largo; lámina angostamente ligulado lanceolada, obtusa, 1.7-4.2 x 0.2-0.45 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa (con el tiempo se producen nuevos racimos del ápice del mismo tallo), erecta, 0.4-1 cm de largo; pedúnculo terete, corto, cubierto por varias brácteas. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, margen entero, conduplicadas e imbricadas, fibrosas con el tiempo, hasta 1.5 mm de largo. **Flores** una a la vez por racimo, sucesivas, resupinadas, del color amarillo pálido, sin datos de fragancia. **Ovario** terete, algo ventralmente inflado en la mitad apical, 6-7 mm de largo. **Sépalos** entreabiertos, libres, angostamente elípticos, acuminados, 5-nervados, margen entero, extendido, 6.5 x 2 mm. **Pétalos** entreabiertos, libres, angostamente elíptico trulados, acuminados, 3-nervados, margen entero, extendido, 5.5 x 1.3 mm. **Labelo** unido a la columna, triangular, truncado en la base, esquinas redondeadas, acuminado, margen entero, 3.5 x 3.5 mm; bicalloso, los callos subglobosos; disco con tres venas engrosadas, diminutamente papiloso. **Columna** delgada, recta, 3.5 mm de largo incluyendo el clinandrio prominente. **Clinandrio** prominente, sobrepasando el cuerpo de la columna, de la mitad del largo total de la columna, margen trilobado, el lóbulo dorsal dentado, lóbulos laterales oblongos, obtusos. **Antera** reniforme, 4-locular. **Polinios** 4, ovoides; caudículas suaves y granulosas. **Rostelo** hendido. **Lóbulos laterales del estigma** de un cuarto del largo de la cavidad estigmática. **Nectario** penetrando la mitad del ovario, ancho, escasa y diminutamente papiloso. **Cápsula** no vista.

Epiphytic **herb**, with a somewhat elongate sympodium, moderately repent. **Roots** from some of the basal nodes of the stem. **Stem** cane-like, terete in the basal portion, laterally flattened above. **Leaves** 3-4, distributed along the apical half of the stem, sheaths ancipitose, blade narrowly ligulate-lanceolate, obtuse. **Inflorescence** apical, pluri-racemose (producing new racemes from the apex of the stem with time), erect, peduncle terete, short, covered by bracts. **Floral bracts** very short, triangular, acute, imbricate. **Flowers** one at a time, successive (when several, one from each raceme) resupinate, pale yellow. **Ovary** terete, slightly inflated ventrally along the apical half. **Sepals** partly spreading, narrowly elliptic, acuminate, 5-veined, margin entire. **Petals** partly spreading, narrowly, elliptic-trullate, acuminate, 3-veined, margin entire. **Lip** united to the column, triangular, truncate at the base, corners rounded, acuminate, bicallose, the calli subglobose, disc with 3 thickened veins, minutely papillose. **Column** thin, straight. **Clinandrium-hood** prominent, occupying one half of the length of the column, three-lobed, dorsal lobe dentate, lateral lobes oblong, obtuse. **Pollinia** 4, ovoid, caudicles soft and granulose. **Rostellum** slit. **Nectary** penetrating half the ovary, wide, scarcely and minutely papillose.

OTHER SPECIMENS: None seen.

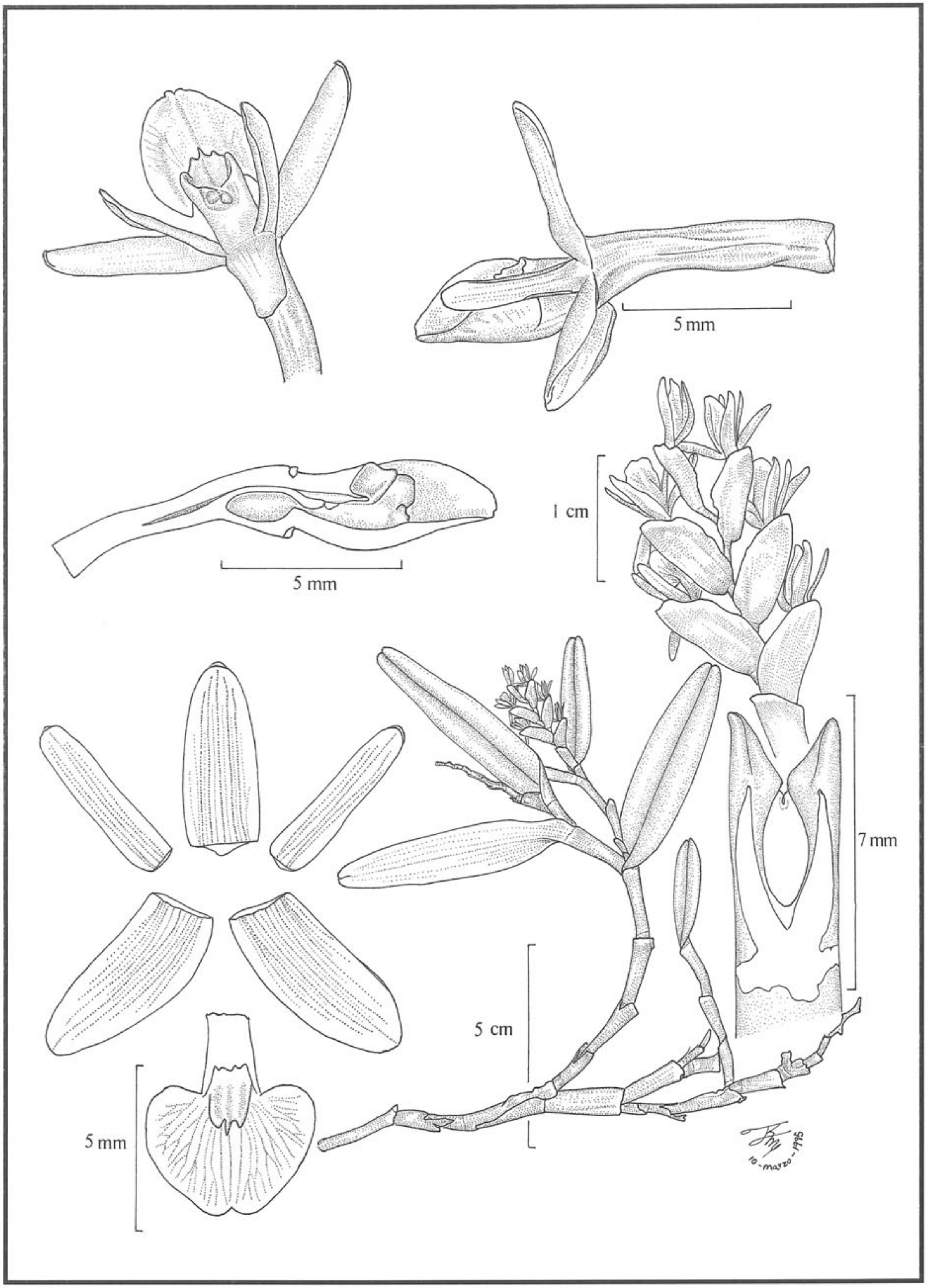
DISTRIBUTION AND ECOLOGY: Known only from the Pacific slope of the Andes at the border of Colombia and Ecuador, in wet mountain forest, at 800 m altitude. Epiphytic. Flowering in December.

RECOGNITION: *Epidendrum glossoclinium* belongs to the Allenii Subgroup of the Albertii Group, recognized by the caespitose habit, ancipitose stems, apical inflorescence, the imbricating bracts, successive flowers, one at a time, and frequently prominent clinandrium-hood. The species is recognized by the thin, small-leaved (1.7-4.2 x 0.4-0.5 cm) plants, the short, terete peduncle of the inflorescence covered by numerous bracts, successive, pale yellow flowers, one at a time, the partly spreading sepals and petals, triangular, acuminate lip with subglobose calli, and the 3-lobed clinandrium-hood with the lateral lobes oblong, obtuse. The flowers closely resemble *E. dactyloclinium* from southern Ecuador on the Amazon basin, which has longer, wider, leaves (9.8-12.5 x 1.0-1.8 cm), larger flowers (sepals 12.6-13 mm long), the calli of the lip elongate, narrow, and the clinandrium-hood deeply dentate with the lateral lobes narrowly oblong and acute. In its area of distribution it can be confused with *E. jejunum* Rchb.f., a species of the Difforme Group with leaves up to 12 cm long, a cordiform lip and the clinandrium-hood short, slightly surpassing the body of the column. *Epidendrum stellidifforme* Hágsater & Dodson, also described from Maldonado, has star shaped flowers and the clinandrium hood 3-lobed, with laminar side lobes, and the midlobe deeply dentate.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek γλωσσα, tongue, and κλινη, couch, bed, in reference to the tongue-like lateral lobes of the clinandrium-hood which distinguish this species, in particular from the finger-like, acuminate, lateral lobes of *E. dactyloclinium* Hágsater & Dodson.



EPIDENDRUM GLUMARUM Hamer & Garay **Plate 942**

EPIDENDRUM GLUMARUM Hamer & Garay, Icon. Pl. Trop. 13: pl. 1219. 1985.

Type: NICARAGUA: Granada: Volcán Mombacho, 1200-1220 m, ***John T. Atwood, Steven A. Marshall and David A. Neill 6744.*** Holotype: AMES! (Xerox copy SEL!) Isotypes: BM! F! UC! [There is another specimen with the same collection data at MO!, but it corresponds to *Epidendrum pseudoramosum* Schltr.]

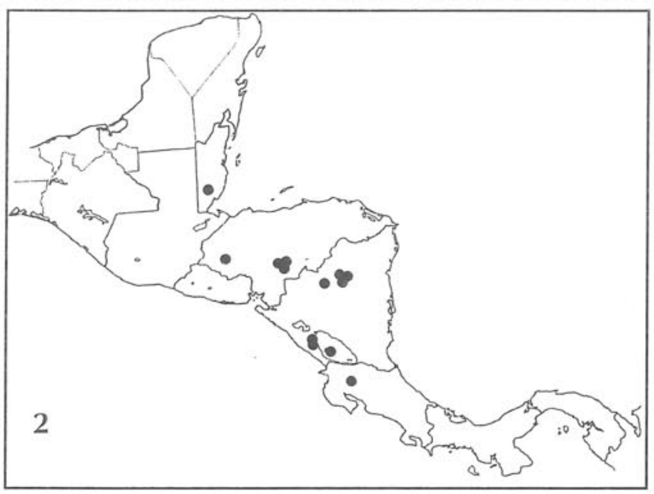
Hierba epífita, erecta, cespitosa, 20-50 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** lateralmente comprimidos, flexuosos, ramificados, el principal de 20-30 x 0.2-0.55 cm, los secundarios de 3-8 x 0.2-0.35 cm, los terciarios de 2-5 x 0.15-0.25 cm. **Hojas** numerosas en el tallo principal, distribuidas a lo largo del tallo, los secundarios con 3-6, los terciarios con 2-4; vaina foliar tubular, papirácea, finamente rugosa y estriada, 10-18 mm de largo; láminas angostamente ovado elípticas, ápice desigualmente bilobado, coriáceas, carinadas, las del tallo principal 5-10 x 1.2-2 cm, las de los tallos secundarios y terciarios 2.5-4 x 0.6-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida en cualquiera de las ramificaciones, una espiga, laxa, fractiflexa, 3 cm de largo: pedúnculo corto, de 0.4-0.5 cm de largo, con una bráctea oblongo triangular, redondeada, conduplicada, envolvente, 7 x 3 mm. **Brácteas florales** más largas que el ovario, envolventes, espaciadas, conduplicadas, ovadas, redondeadas, 5-9 x 1.5-4.5 mm. **Flores** 6-12, simultáneas, el labelo siempre orientado hacia la raquis, verdosas. **Ovario** ligeramente inflado ventralmente por detrás del perianto, 5-7 mm de largo. **Sépalos** redondeados, 7-nervados, con numerosas nervaduras secundarias, margen entero, revoluto, el **dorsal** extendido, angostamente lanceolado, 5.5-6 x 2-2.4 mm, los **laterales** entreabiertos, oblicuamente oblongo lanceolados, 6 x 2-2.6 mm. **Pétalos** entreabiertos, oblongos, redondeados, 3-nervados, con las venas laterales divididas dando la apariencia de ser 5-nervados, margen entero, revoluto, 5.5 x 1 mm. **Labelo** cordiforme, ápice emarginado, margen entero, 3.8 x 5.2 mm; callo único, en forma de tridente; unicarinado, la carina roma, poco evidente. **Columna** recta, gruesa, corta, con un par de lóbulos apicales, laterales, redondeados, 3 mm de largo. **Clinandrio** reducido, entero. **Antera** obovada, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que la longitud de los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** muy pequeños, apenas evidentes en la cavidad estigmática. **Nectario** poco profundo, penetrando 1/3 del ovario, inflado detrás del perianto, no ornamentado. **Cápsula** no vista.

Epiphytic, erect, monopodial, branching **herb. Roots** basal, fleshy, thin, from the base of the main stem. **Stems** laterally compressed, flexuous, branching, the branches shorter than the main stem. **Leaves** numerous on the main stem, distributed throughout the stem, 3-6 on the secondary stems; sheath tubular, papiraceous, minutely rugose and striated; blades narrowly ovate-elliptic, apex unequally bilobed, coriaceous, carinate. **Inflorescence** apical, from any of the stems, a spike, distichous, zigzag, peduncle short, with one oblong-triangular, conduplicate bract, rachis exposed, not covered by the floral bracts. **Floral bracts** longer than the ovary, interspaced, conduplicate, ovate, rounded. **Flowers** 6-12, simultaneous, distichous, the lip always oriented towards the rachis, greenish. **Ovary** slightly inflated ventrally behind the perianth. **Sepals** rounded, 7-veined, with numerous secondary veins, margin entire, revolute, the dorsal sepals spreading, narrowly lanceolate, the lateral sepals partly spreading, obliquely oblong-lanceolate. **Petals** partly spreading, oblong, rounded, 3-veined, the lateral veins bifurcate and thus appearing 5-veined, margin entire, revolute. **Lip** cordiform, apex emarginate, margin entire; callus tridentate, prolonged into a single low, rounded, keel. **Column** straight, thick, with two lateral, rounded lobes. **Clinandrium-hood** reduced, entire. **Anther** obovate, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** subapical, slit. **Nectary** shallow, penetrating 1/3 of the ovary, inflated behind the perianth, smooth.

OTHER SPECIMENS: BELIZE: Toledo: Doyle's Delight, highest point in Belize, Southern Maya Mountains, 1140 m, 9 XII 1993, *Allen 15296*, MO! (Illustration voucher.) **HONDURAS: El Paraiso:** Cerro Monserrat, 17 VI 1970, *Hernández 5109*, AMES! Montaña de Yuscarán, 1800 m, 31 XII 1943, *Valerio 1917*, AMES! F! **Intibuca:** Cordillera Opalaca, 6 km NO de La Esperanza, 2000 m, 6 IV 1957, *Molina 7972*, NY! **Francisco Morazán:** Mount Uyuca, 1 VIII 1960, *Pfeifer 1818*, US! Mt. Uyuca, 1900 m, 23 XII 1950, *Sauer 1547*, MICH! Cerro de Uyuca, La Labranza and vicinity, 1600-1800 m, 22 VIII 1949, *Standley 23080*, F! Uyuca, 1228 m, 8 IX 1943, *Valerio 771*, AMES! Mt. Uyuca, 1800 m, 5 XII 1948, *Williams 11143*, F! MO! **NICARAGUA: Granada:** Summit Volcán Mombacho, 20 I 1974, *Atwood 7058*, MO! Mombacho, IX 1938, *Garnier 5023*, AMES x2! Volcán Mombacho, 1200 m, 23 II 1981, *Moreno 7111*, MO! Ibid. *Moreno 7471*, MO! Ibid. 1100-1200 m, 23 III 1980, *Stevens 16845*, MO! **Rivas:** Isla Ometepe, Volcán Maderas, 800-1000 m, 24 II 1978, *Neill 3293*, F! MO! **Zelaya:** Cerro La Pimienta, 1000-1200 m, 14 IV 1979, *Grijalva 344*, MO! Cerro El Hormiguero, ca. 1100-1183 m, 15 IV 1979, *Pipoly 5157*, MO! SEL! Cerro La Pimienta, ca. 900-1180 m, 16 III 1980, *Pipoly 6088*, MO! **COSTA RICA: Alajuela:** Reserva Biológica Monteverde, Río Pañas Blancas. Finca de Jesús Rojas, 850-900 m, 4 XII 1989, *Bello 1556*, INB!

OTHER RECORDS: NICARAGUA: Granada: Mombacho Volcano, 4200 ft., *Heller 3819*, illustration, description, SEL! xerox AMO! Mombacho Volcano, 4100 ft, *Heller 3820*, illustration, description, SEL! xerox AMO! **Jinotega:** Peña Blanca, 3900 ft, *Heller 8444*, illustration, SEL!, xerox AMO!

DISTRIBUTION AND ECOLOGY: Belize, Honduras, Nicaragua and Costa Rica, at 850-2000 m altitude on trees on the summit of mountain ranges and volcanoes. Flowering from August to April.



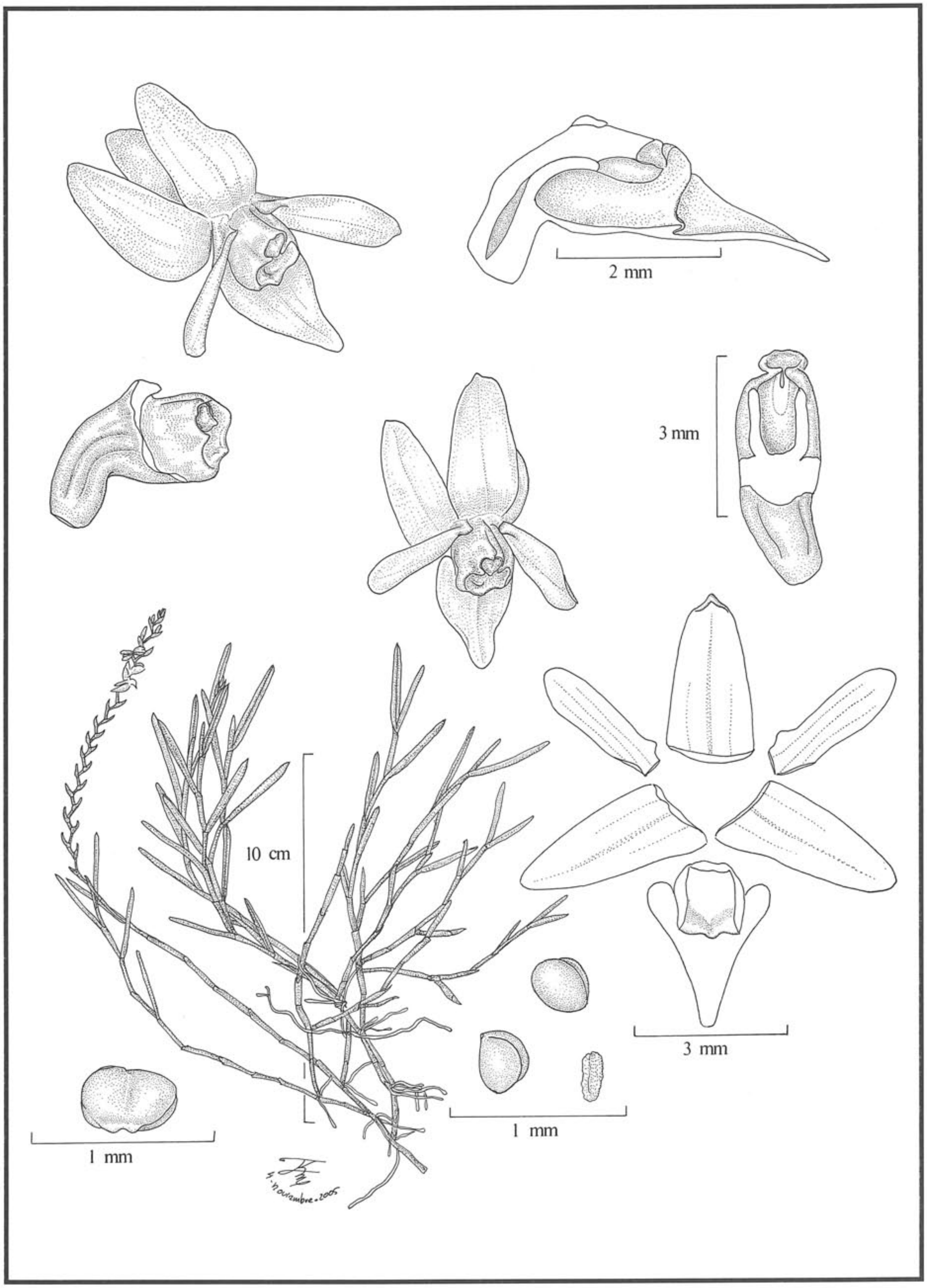
RECOGNITION: *Epidendrum glumarum* belongs to the Ramosum Group which is characterized by the submonopodial, much branched stems, apical racemose, inflorescence, and distichous flowers; and Ramosum Subgroup which has an erect primary stem and many smaller branches, several flowers on a zigzag rachis, the floral bracts usually covering more than the ovary. The species has laterally compressed stems, leaves narrowly ovate-elliptic, 6-20 mm wide, the apex unequally bilobed, 6-12 green flowers, the lip cordiform, rounded, emarginate, and the callus tridentate. It is similar to *E. pseudoramosum* Schltr. which has terete stems, narrow, oblong leaves, <10 mm wide, 2-5 flowers with the lip triangular-ovate. *Epidendrum ramosum* Jacq. has terete stems, narrow, strap-like leaves, green to yellowish green flowers, acute segments and a triangular lip. *Epidendrum mixtum* Schltr. is similar to the latter but has larger white flowers, and larger leaves.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *gluma*, like the glumes of grasses, in reference to the floral bracts which characterized this species.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM GONIORHACHIS Schltr. **Plate 943**

EPIDENDRUM GONIORHACHIS Schltr., Beih. Bot. Centralbl. 36(2): 462. 1918.

Basionym: *Epidendrum fractiflexum* F.Lehm. & Kraenzl., in Kraenzl., Bot. Jahrb. Syst. 26: 468. 1899, Type: COSTA RICA: [Cartago: Isarú:] Aguas Calientes bei Cartago, [9°51'N 83°56'W] 1800 m, 5 January 1882, ***F. C. Lehmann 1077***, Holotype: G! Photo: F, SEL! Isotypes BM! LE! Not *Epidendrum fractiflexum* Barb.Rodr., 1882.
Synonym: *Epidanthus goniorhachis* (Schltr.) L.O.Williams, Bot. Mus. Leafl. 8(7):150. 1940.

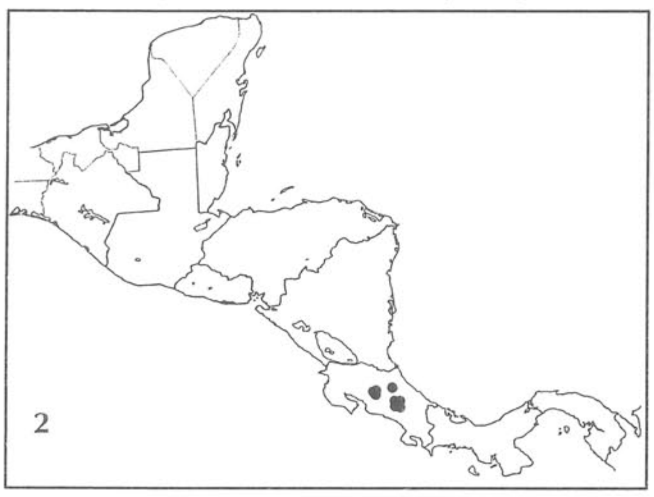
Hierba epífita, simpodial, cespitosa, 7-20 cm de alto. **Raíces** originándose en la base de cada tallo, escasas, muy delgadas, blancas, 0.1-0.3 mm de grosor. **Tallos** sencillos, producidos del primero o segundo entrenudo basal del tallo anterior, tipo caña, teretes, muy delgados, erectos, rectos, 3-8.5 x 0.05-0.1 cm. **Hojas** 6-9, distribuidas a todo lo largo del tallo, alternas, articuladas, algo carnosas, generalmente caedizas; vaina tubular, finamente estriada, algo rugosa, el ápice con un apéndice pequeño, angostamente triangular, agudo, opuesto a la lámina foliar, 5-10 x ca. 1 mm; lámina linear, redondeada, margen entero, 1.2-3 x 0.1-0.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, laxa, suberecta, 3-9 cm de largo; pedúnculo lateralmente aplanado, recto, 15-19 mm de largo; provisto de una bráctea apical, semejante a las florales, angostamente triangular, aguda, abrazadora, 5-7 mm de largo; raquis fuertemente fractiflexo. **Brácteas florales** ligeramente más largas que el ovario, anchamente triangulares, agudas, amplexicaules, 2-4 mm de largo. **Ovario** terete, delgado, no inflado, liso, 2-3 mm de largo. **Flores** 8-28, sucesivas, resupinadas, dísticas, sépalos color crema, densamente cubiertos con diminutas barras moradas, dando la impresión de ser color rojo oscuro, pétalos y labelo blancos con manchas púrpura, columna amarilla. **Sépalos** reflexos, libres, ovado triangulares, redondeados, diminutamente apiculados, 3-nervados, las nervaduras laterales cortas, margen entero, 2-3.5 x 1-1.5 mm; los **laterales** oblicuos. **Pétalos** paralelos a la columna y fusionados a la base de la misma, oblongos, redondeados, 3-nervados, margen entero, con una aurícula diminuta y carnosa en la base del margen dorsal, 2.5-3.5 x 0.5-1 mm. **Labelo** unido a la columna, entero, triangular, auriculado, cortamente acuminado, margen entero, 3.2 x 2.4 mm; unicalloso, el callo laminar, truncado, diminutamente apiculado, oculto casi en su totalidad por el ápice de la columna, desprovisto de quillas. **Columna** muy corta, recta, gruesa, 0.8 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, 2-locular. **Polinios** 2, con una línea de fusión evidente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** apenas penetrando el perianto, amplio, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** originating from the base of the stems, scarce, very thin, white. **Stems** simple, produced from the first or second internodes of the previous stem, cane-like, terete, very thin, erect, straight. **Leaves** 6-9, distributed throughout the stem, alternate, articulate, more or less fleshy, generally deciduous; sheath tubular, minutely striated, somewhat rugose, with a small, narrowly triangular, acute appendix opposite the blade; blade linear, rounded, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, lax, suberect; peduncle laterally compressed, straight, provided with an apical bract, similar to the floral bracts; rachis strongly zigzag. **Floral bracts** slightly longer than the ovary, widely triangular, acute, amplexicaule. **Ovary** terete, thin, not inflated, smooth. **Flowers** 8-28, successive, resupinate, distichous, sepals cream-colored, densely colored with minute purple bars, appearing dark red, petals and lip white with purple spots, column yellow. **Sepals** reflexed, free, ovate-triangular, rounded, minutely apiculate, 3-veined, the lateral veins short, margin entire; lateral sepals oblique. **Petals** parallel to the column and fused to its base, oblong, rounded, 3-veined, margin entire, with a minute, fleshy auricle at the base of the dorsal margin. **Lip** united to the column, entire, triangular, articulate, short acuminate, margin entire; callus single, truncate, minutely apiculate, nearly totally hidden under the apex of the column, disc without keels. **Column** very short, straight, thick. **Clinandrium-hood** short, margin entire. **Anther** reniform, 2-celled. **Pollinia** 2, with an evident fusion line. **Rostellum** apical, slit. **Nectary** shallow, as deep as the perianth, wide, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic from central Costa Rica, epiphytic, at 700-1780 m altitude. Flowering August to January.

RECOGNITION: *Epidendrum goniorhachis* belongs to the Epidanthus Group, which is characterized by short, small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the strongly zigzag rachis of the inflorescence, the petals fused to the base of the column and parallel to it, the lip entire, somewhat longer than wide, triangular, auriculate at the base, and the flowers dark red with purple spots. *Epidendrum selaginella* Schltr. and its sister species *E. stenoselaginella* Hágsater & E.Santiago and *E. astroselaginella* Hágsater & E. Santiago, have a very similar, entire lip, except that it is ecallose, flat, very short leaves (to 10.5 mm long), and greenish to greenish yellow flowers and 4 pollinia. *Epidendrum muscicolum* Schltr. and *E. talamancanum* (Atwood) Mora-Retana & J.García, both have much taller plants (to 30 cm tall), the flowers white or cream-colored, the petals free, porrect, with a thickened, fleshy callus at the base, and the lip clearly 3-lobed, with the midlobe linear-subulate.



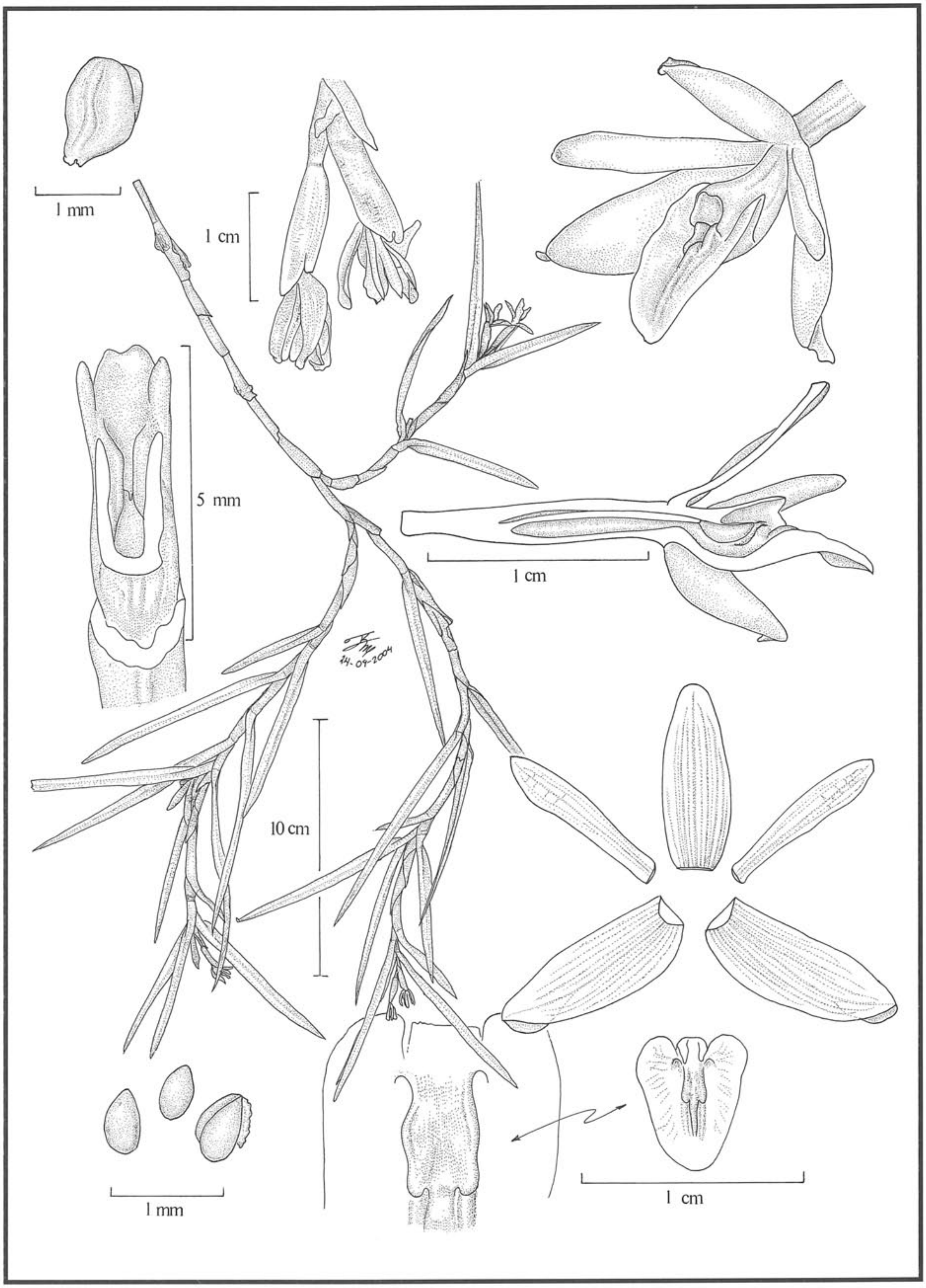
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek γωνια, angle, and ραχις, rachis of the inflorescence, in reference to the strongly zigzag rachis of the inflorescence. The name *Epidendrum goniorhachis* Schltr. was published as a new name to replace *Epidendrum fractiflexum* F.Lehm. & Kraenzl., a later homonym of *Epidendrum fractiflexum* Barb. Rodr. from Brazil.

REFERENCES: Barringer, K., 1991, A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae), **Brittonia** 43(4): 240-252. Dressler, R. L., 1983, Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá, **Orquídea (Mexico City)** 9(1): 13-19. Dressler, R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 83. Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 270, 305, San José C.R. Editorial de la Universidad de Costa Rica. Williams, L. O., 1940, A new genus of the Orchidaceae from Central America, **Bot. Mus. Leafl.** 8: 148-151.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM GUANACASTENSE Ames & C.Schweinf. **Plate 944**

EPIDENDRUM GUANACASTENSE Ames & C.Schweinf., Sched. Orch. 10: 64. 1930.

Type: COSTA RICA: Guanacaste: El Arenal, 485-600 m, 18-19 January 1926, ***Paul C. Standley & Juvenal Valerio 45089.*** Holotype: AMES 33499! Isotype: AMES 33500! US 1493522!

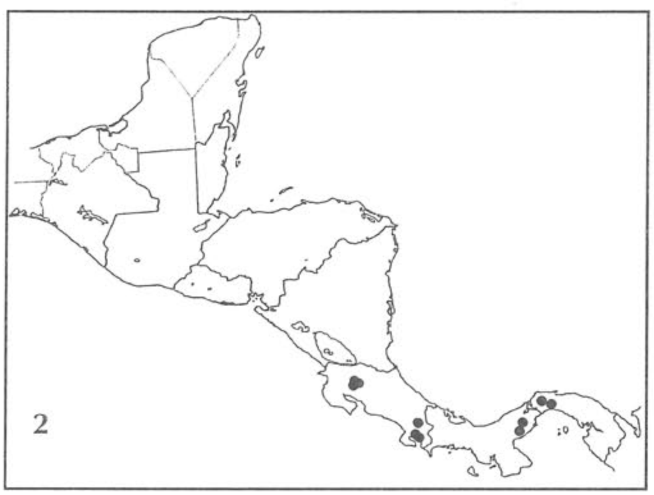
Synonym: *Epidendrum cocleense* Ames, F.T.Hubb. & C.Schweinf. Bot. Mus. Leafl. 4(1): 6. 1936. Type: PANAMA: Coclé: El Valle de Antón, lower portion of valley and marshes along R. Antón, about 500 m, 2 February 1935, ***A. A. Hunter & P. H. Allen 389***. Holotype: AMES 41863! Isotypes: BM! BR! CAS 358175! F 1323124! G! K! MICH! MO 1090372! NY! P! S! (Illustration voucher.) SEL 9588! U 65726A! UC 790898! US 1976117!

Hierba epífita, monopodial, ramificada, colgante, de 60-250 cm de largo. **Raíces** basales del tallo primario, carnosas, filiformes, 0.5-1.3 mm de grosor. **Tallos** teretes, rectos, ramificados, el principal de 18-76 x 0.12-0.30 cm, los secundarios escasos, de 5-13 x 0.12-0.30 cm; ramificaciones florales numerosas, cortas, de 3-6.5 x 0.20-0.25 cm, originadas tanto en el tallo principal como en los tallos secundarios, y formando cadenas al producir un nuevo tallo de floración del internodo subapical. **Hojas** numerosas en el tallo principal, semejantes, distribuidas a lo largo de todo el tallo, 9.5-10 x 0.35-0.40 cm, las de los tallos secundarios 6-10, distribuidas a lo largo de las 2/3 partes del tallo, semejantes, 5-10 x 0.35-0.55 cm, las de los tallos terciarios o florales 3-4, desiguales, agrupadas hacia el 1/4 apical del tallo, 4.5-8 x 0.35-0.45 cm, vaina tubular, finamente rugosa, 10-15 cm de largo; láminas linear lanceoladas, acuminadas, cortamente mucronadas, coriáceas, ligeramente carinadas. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida de las ramificaciones secundarias y florales, laxa, florece una sola vez, 2-3 cm de largo, pedúnculo reducido. **Brácteas florales** más largas que el ovario, envolventes, imbricadas, ovado oblongas, redondeadas, 12-14 x 5-6.4 mm. **Flores** 2-4, simultaneas, el labelo siempre orientado hacia el raquis, color verde tornándose amarillo ámbar al envejecer, fragancia no registrada. **Ovario** terete, liso, 9-11 x 1.3-1.5 mm. **Sépalos** entreabiertos, angostamente ovado lanceolados, 9-11 nervados, margen ligeramente revoluto, entero, 8-10 x 2.5-3.0 mm, el dorsal redondeado, los laterales oblicuos, agudos, con una carina dorsal apical prominente. **Pétalos** entreabiertos, linear oblanceolados, obtusos, 3-nervados, las venas laterales bifurcadas en la mitad apical, dando la apariencia de ser 5-nervados, margen extendido, entero, 7-9 x 1.8-2 mm. **Labelo** entero, los lados basales abrazando la columna ligeramente en posición natural, cordiforme, ápice redondeado, margen entero, 5-6 x 4.8-5 mm; unicalloso, en forma de "Y", de aspecto laminar, prominente, con una carina prominente prolongándose desde la mitad del labelo hasta el ápice. **Columna** algo arqueada hacia arriba de la mitad en adelante, delgada, corta, 4.8-5 mm de largo incluyendo el clinandrio largo. **Clinandrio** prominente, margen entero. **Antera** obovada, con un pico romo al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** en el tercio apical de la columna incluyendo el clinandrio, hendido. **Lóbulos laterales del estigma** prominentes, de 1/2 de la cavidad estigmática. **Nectario** profundo, penetrando cerca de 2/3 de la longitud del ovario. **Cápsula** no vista.

Epiphytic, pendent, monopodial, branching **herb. Roots** basal on the primary stem, fleshy, filiform. **Stems** terete, straight, branching, the secondary stems scarce, the floral branches numerous, short, originating from the primary and secondary stems as well as from the subapical internode of previous floral branches and thus forming chains. **Leaves** numerous and similar throughout the primary stem, 6-10 on the secondary stems, 3-4 on the floral stems, unequal, aggregated towards the apical 1/4 of the stems; sheaths tubular, minutely rugose; blades linear-lanceolate, acuminate, short-mucronate, coriaceous, slightly carinate. **Inflorescence** apical, from the secondary and floral stems, lax, flowering only once, peduncle abbreviated. **Floral bracts** longer than the ovary and covering it, imbricating, ovate-oblong, rounded. **Flowers** 2-4, simultaneous, lip always facing the rachis, green turning amber-yellow. **Ovary** terete, smooth. **Sepals** partly spreading, narrowly ovate-lanceolate, 9-11 veined, margin slightly revolute, entire; the dorsal sepal rounded, the lateral sepals oblique, acute, with a prominent dorsal keel. **Petals** partly spreading, linear-oblanceolate, obtuse, margin spreading, entire. **Lip** entire, the basal sides somewhat embracing the column in natural position, cordiform, apex rounded, margin entire; callus "Y" shaped, laminar, prominent, with a keel running down the middle to the apex. **Column** somewhat arching upwards from the middle on, thin, short. **Clinandrium-hood** prominent, margin entire. **Anther** obovate, ending in a beak in front, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles smooth and granulose, shorter than the pollinia, viscidium semiliquid, transparent. **Rostellum** at the apical third of the column including the clinandrium-hood, slit. **Nectary** deep, penetrating about 2/3 of the ovary.

DISTRIBUTION AND ECOLOGY: Ranges along the lowland Pacific watershed from north-western Costa Rica to central Panama. Epiphyte, from 0-1000 m altitude, growing in riparian vegetation or mangrove. Flowering from August to February.

OTHER SPECIMENS: COSTA RICA: Guanacaste: La Tejona, 600 m, 25 I 1926, *Standley 46041*, AMES! US! **Puntarenas:** Río Ceibo, 150 m, 20 VIII 1985, *Hágsater 7645*, AMO! Golfo Dulce, 0 m, 19 VIII 1990, *Soto s.n.*, USJ! Coto, Golfo Dulce, 0 m, 17 II 1933, *Valerio 575*, CR! **PANAMA: Coclé:** Valle de Anton, 1000 m, 20 I 1951, *Griffin s.n.*, AMES! **Colón:** Boquerón, end of road near Río Boqueron, Road is 2 km N of cement plant on Colon highway, ca 26 km E of turnoff to end of road, 500 ft, 14 I 1978, *Hammel 923*, AMO! MO! PMA! **Panamá:** Altos de Pacora, La Eneida, region of Cerro Jefe, 25 XII 1967, *Dressler 3280*, MO! Herb. Dressler! Cerro Jefe, 8 I 1969, *Dressler 3589*, Herb. Dressler!



RECOGNITION: *Epidendrum guanacastense* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single "Y" shaped callus, and the Isomerum Subgroup which is recognized by the pendent plants, very narrow, acuminate leaves, with 1 to rarely 4 flowers. The species is recognized by the 2-4 flowered raceme, and the rounded dorsal sepal, the lip cordiform. It is similar to the much more widespread *E. isomerum* Schltr. which also has linear leaves, but a one-flowered inflorescence, linear-lanceolate, acuminate floral segments, and the lip linear-triangular.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Province of Guanacaste in northwestern Costa Rica, where the type was collected.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM HAJEKII R.Vásquez & Dodson **Plate 945**

EPIDENDRUM HAJEKII R.Vásquez & Dodson, Rev. Soc. Bol. Bot. 2(2): 147. 1999.

Type: BOLIVIA: Cochabamba: Prov. Chaparé, Pampa Tambo, ca. 2800 m, June 1979, colected and cultivated by Carlos Hajek s.n., ***R. Vásquez 162.*** Holotype: VASQ, in spirit. Illustration prepared from the live pretype plant: Rev. Soc. Bol. Bot. 2(2): 148. 1999.

Hierba simpodial, cespitosa, ca. de 30-60 cm de alto. **Raíces** basales, en el tallo, carnosas, gruesas, 0.8-1.5 mm de grosor y en la base de cada inflorescencia lateral, escasas, erectas. **Tallos** mayormente sencillos, tipo caña, teretes, delgados, rectos, ca. 30-60 x 0.13-0.47 cm, ocasionalmente produciendo una ramificación de cerca del ápice. **Hojas** numerosas, distribuidas en la mitad apical del tallo, articuladas, alternas; vaina tubular, finamente estriada, escasamente verrugosa, 14-40 x 1.3-4.7 mm; lámina linear lanceolada, acuminada, subcoriácea, margen entero, 9.5-18 x 0.7-1.0 cm. **Bráctea espatácea** ausente. **Inflorescencias** apical en primera floración y luego laterales, distribuidas a lo largo de todo el tallo, numerosas, racemosas, sucesivas, paucifloras, laxas, 4-5 cm de largo; pedúnculo de la inflorescencia apical algo aplanado, 2-8 cm de largo, fractiflexo, provisto de 3-6 brácteas grandes, conduplicadas, dísticas, acuminadas, decrecientes de 1-3 cm de largo, pedúnculo de la inflorescencias laterales terete, delgado, recto, 2.5-3.5 cm de largo, oculto en su totalidad por 3 o 4 brácteas, tubulares, agudas e imbricadas, 4-17 mm de largo; raquis terete, delgado, algo flexuoso, 1.5-2 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, abrazadoras, 2-8 mm de largo. **Flores** 3, simultáneas, resupinadas, de color verde, difuminados de marrón claro, con el labelo blanco difuminado de violeta, columna blanca con manchas violetas en el ápice; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 14-20 mm de largo. **Sépalos** reflexos, libres, linear oblanceolados, ligeramente cóncavos en el ápice, subagudos, 3-nervados, margen entero, extendido, 11.5-16 x 2-4 mm; los **laterales** con una quilla dorsal baja, oblicuos. **Pétalos** ligeramente reflexos, libres, filiformes, ápice redondeado, 1-nervados, margen entero, extendido, 11-16 x 0.5-0.8 mm. **Labelo** unido a la columna, 3-lobado, convexo, base subtruncada, margen fimbriado, 5 x 8 mm; bicalloso, los callos delgados, cortos; disco con tres quillas delgadas en el itsmo, lisas; lóbulos laterales subcuadrados, truncados, 3.5 x 4 mm; lóbulo medio formando un istmo angosto y corto en la base, el ápice profundamente bilobado, formando un par de lóbulos oblongo rectangulares, truncados y ligeramente divaricados, 1.6 x 2.6 mm. **Columna** delgada, más o menos arqueada, 10-15 mm de largo. **Clinandrio** reducido, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente aplanados; caudículas del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Sympodial, caespitose, occasionally branching **herb. Roots** basal, from the base of the stems, fleshy, thick, and from the base of each lateral inflorescence, these short, erect, scarce. **Stems** mostly simple, cane-like, terete, thin, straight, occasionally producing a branch near the apex. **Leaves** numerous, distributed along the apical half of the stems, articulate, alternate; sheath tubular, minutely striated, scarcely verrucose; blade linear-lanceolate, acuminate, subcoriaceous, margin entire. **Inflorescences** apical at first flowering, then lateral, numerous throughout the stem, producing a second raceme from the base of the first, racemose, successive, few, lax-flowered; peduncle of the apical inflorescence short to long, zigzag, provided with 3-6 long, conduplicate, acuminate bracts, the lateral inflorescences with the peduncle terete, thin, straight, short, hidden by 3 or 6 bracts, tubular, acute and imbricating; rachis somewhat flexuous. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate. **Flowers** 3, simultaneous, resupinate, green, tinged with pale maroon, the lip white tinged with violet, column white, the apex with violet spots. **Ovary** terete, thin, long, not inflated, smooth. **Sepals** reflexed, free, linear-oblanceolate, slightly concave towards the apex, subacute, 3-veined, margin entire, spreading; the lateral sepals with a low dorsal keel, oblique. **Petals** slightly reflexed, free, filiform, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, convex, base truncate, margin fimbriate; bicallose, the calli thin, short, disc provided with 3 short, smooth keels on the isthmus; lateral lobes subquadrate, truncate, midlobe formed by a narrow, short isthmus, then spreading into two divergent, oblong-rectangular lobes. **Column** thin, more or less arched. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles twice as long as the pollinia. **Rostellum** apical, slit.

OTHER SPECIMENS: PERU: Madre de Dios: Prov. Manu, Cerro de Pantiacolla: Río Palotoa, 700-1000 m, 14 XII 1985, *Fernández 1040.* USM! (Illustration voucher, on loan to F!)

OTHER RECORDS: PERU: Junín: Chanchamayo, near Nueva Italia, 1800 m, col. O. del Castillo, 12 IV 1994, *Bennett 6582*, plate 1013, Illustration by M. Alcántara; xerox AMO!

DISTRIBUTION AND ECOLOGY: Known only from the eastern Andes in the Amazon basin of southern Peru and Bolivia, in tropical primary forest and cloud forest, at 700-2800 m altitude. Flowering in April, June and December.

RECOGNITION: *Epidendrum hajekii* belongs to the Jatunsachanum Group, which is recognized by the caespitose habit, numerous narrow leaves, apical inflorescence, and lateral inflorescences in mature plants of some species, the inflorescences producing new racemes through time, column long and thin, petals filiform, the lip 3-lobed, the midlobe bifid, the apical margins fimbriate, with two small calli and the disc with 1-3 low rounded, fleshy keels, the pollinia obovoid, laterally compressed, with the caudicles soft and granulose, longer than the pollinia. The species is recognized by the long, linear-lanceolate leaves, the numerous, an apical inflorescence at first flowering, the producing short, 3 flowered lateral inflorescences, the lip with the margin fimbriate, and the obovoid, somewhat laterally compressed but not bird-winged pollinia. This species is quite unusual in that it has numerous short, lateral inflorescences when mature, after producing the first inflorescence which is apical, the numerous relatively narrow, linear-lanceolate leaves, and the flowers are reminiscent of the paniculatum group, but the pollinia are not bird-wing type, and the caudicles soft and granulose. The flowers are reminiscent of *Epidendrum jatunsachanum* Dodson & Hágsater, but that species has laterally compressed, ancipitose stems, and a single, long, zigzag, apical inflorescence, which produces succesive racemes through time, and the lip has a large purple blotch. The short lateral inflorescences, often with a couple of short, thick roots recall *Epidendrum echinatum* Løjtnant, but that species has much wider leaves, the flowers small, with a short, arched column, and the ovary and dorsal surface of the sepals echinate.

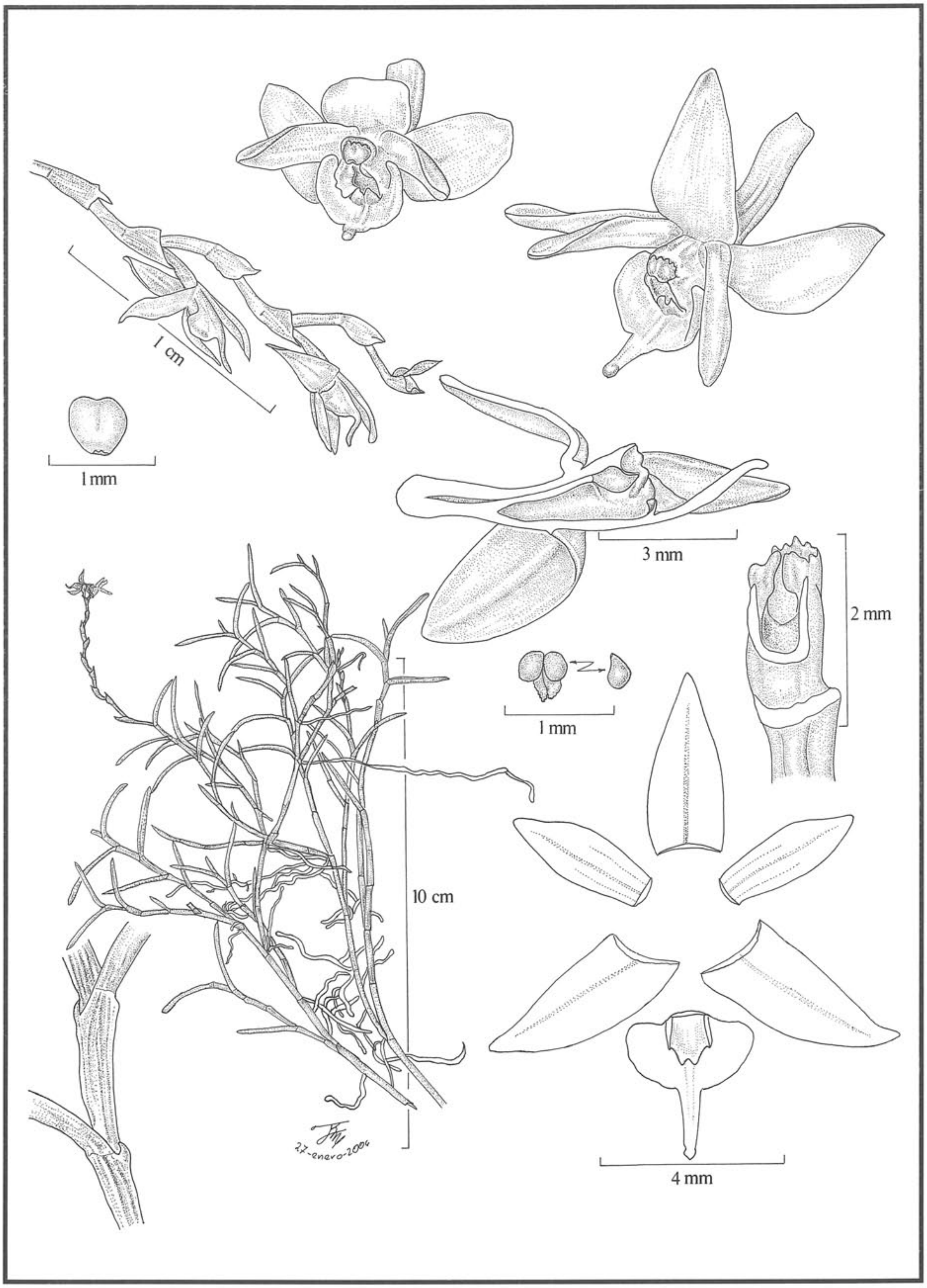


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Ing. Carlos Hajek, who lived for many years in the city of Cochabamba, and put together an important native orchid collection. He collected the type.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM INFUNDIBULUM Hágsater & E.Santiago **Plate 946**

EPIDENDRUM INFUNDIBULUM Hágsater *et* E.Santiago, *sp. nov.*

Type: PANAMÁ: Chiriquí: Vicinity of Fortuna Dam along trail below highway and across the valley of the Hornito, 8°45'N 82°15'W, 1100-1350 m, 24 January 1988, ***Gordon McPherson 11986.*** Holotype: MO! (Illustration voucher.)

Epidendro muscicolo Schltr. simile sed plantis minoribus, petalis ad basem non carnoso-incarnatis, callo bidentato ad apicem sursum flexo, sepalis petalisque uninervatis, discrepans.

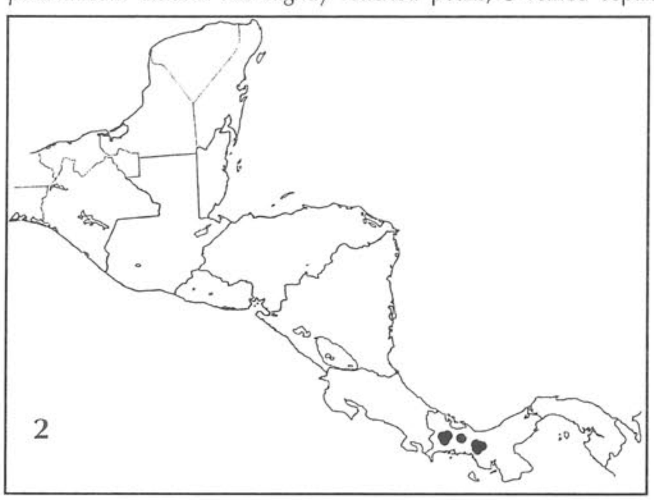
Hierba epífita, simpodial, escandente, 13-15 cm de alto. **Raíces** en la base de cada tallo, escasas, filiformes, blancas, 0.2-0.4 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales de tallos anteriores, tipo caña, teretes, muy cortos, erectos, rectos, 4-7 x 0.04-0.1 cm. **Hojas** 5-6, distribuidas a lo largo del tallo, alternas, articuladas, erecto extendidas, algo carnosas; vaina tubular, finamente estriada, 4-9 x 0.4-1 mm; con una lígula muy pequeña del lado opuesto de la lámina, triangular, aguda, conduplicada, 0.2-0.3 mm de largo; lámina linear, subaguda, margen entero, 1-1.7 x 0.5-1 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, pauciflora, densa, erecta, 3-4 cm de largo; pedúnculo lateralmente aplanado, recto, muy delgado, desprovisto de brácteas, 5-6 mm de largo; raquis algo sinuoso. **Brácteas florales** más cortas a casi tan largas como el ovario, infundibuliformes, ápice agudo, 1.5-2 mm de largo. **Ovario** terete, delgado, no inflado, liso, 2 mm de largo. **Flores** 7-9, sucesivas, (aunque varias abiertas de manera simultánea) resupinadas, dísticas, segmentos florales blancos con matices verdosos; sin datos de fragancia. **Sépalos** reflexos, libres, ovado triangulares, agudos, 1-nervados, margen entero, extendido, 3.7-4 x 1.6 mm; los **laterales** algo oblicuos. **Pétalos** porrectos, libres, ovado rómbicos, agudos, 3-nervados, margen entero, extendido, 3.2 x 1 mm. **Labelo** unido a la columna, 3-lobado, base truncada, margen entero, 2.9 x 2.7 mm; unicalloso, el callo laminar, bidentado, con el ápice dirigido hacia arriba en posición natural, disco desprovisto de quillas; lóbulos laterales insertados cerca de la base de la columna, oblicuamente hemielípticos, redondeados, abrazando a la columna en posición natural (sin envolverla por completo) 9 x 1.3 mm; lóbulo medio angostamente linear subulado, agudo, con un engrosamiento carnoso en el ápice, 1.5 x 0.4 mm. **Columna** corta, recta, gruesa, 2 mm de largo. **Clinandrio** corto, margen eroso. **Antera** reniforme, 2-locular. **Polinios** 2, obovoides, caudículas algo granulosas, algo más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ¼ del ovario, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, scandent **herb. Roots** originating from the base of each stem, scarce, filiform, white. **Stems** simple, produced from the basal internodes of the previous stems, cane-like, terete, very short, erect, straight. **Leaves** 5-6, distributed throughout the stems, alternate, articulate, more or less fleshy, erect-spreading; sheaths tubular, minutely striated, with a small ligule, narrowly triangular, acute, opposite the blade; blade linear, subacute, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, few-flowered, dense, erect; peduncle laterally compressed, straight, very thin, provided with a tubular bract similar to the floral bracts; rachis flexuous. **Floral bracts** shorter to nearly as long as the ovary, infundibuliform, acute. **Ovary** terete, thin, not inflated, smooth. **Flowers** 7-9, successive (though several are open simultaneously), resupinate, distichous, white with a green tinge. **Sepals** reflexed, free, ovate-triangular, acute, 1-veined, margin entire, spreading, the lateral sepals oblique. **Petals** porrect, free, ovate-rhombic, acute, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate, margin entire; callus single, laminar, bidentate, the apex directed upwards in natural position, disc smooth, without keels; lateral lobes inserted near the base of the column, obliquely hemi-elliptic, rounded, embracing the column in natural position, without covering it; midlobe narrowly linear-subulate, acute, with a thickened knob at the apex. **Column** short, straight, thick. **Clinandrium-hood** short, margin erose. **Anther** reniform, 2-celled. **Pollinia** 2, obovoid, caudicles somewhat granulose, somewhat longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/4th of the ovary, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Apparently endemic from western Panama, near the summit of the cordillera, epiphytic in moss covered branches, at about [800] 1100-1800 m altitude. Flowering in October to August.

RECOGNITION: *Epidendrum infundibulum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the short stems (4-7 cm tall), the porrect, ovate-rhombic petals without any fleshy thickening at the base, the bidentate single callus, and the one-veined sepals. *Epidendrum muscicolum* has taller plants (stems 7-20 cm tall), porrect petals, with a fleshy thickened process at the base, the minutely apiculate callus, and 3-veined sepals. *Epidendrum paranthicum* Rchb.f. has slightly reflexed petals, 3-veined sepals, and the lip with a very evident, semicircular callus. *Epidendrum talamancanum* (Atwood) Mora-Retana & J.García has taller plants (stems 9-25 cm), and longer leaves (9-3.2 mm long), larger, creamy white to purple flowers, 3-veined sepals (4.2-7 mm long), and the callus minutely apiculate.


2

CONSERVATION STATUS: DD. Data deficient.

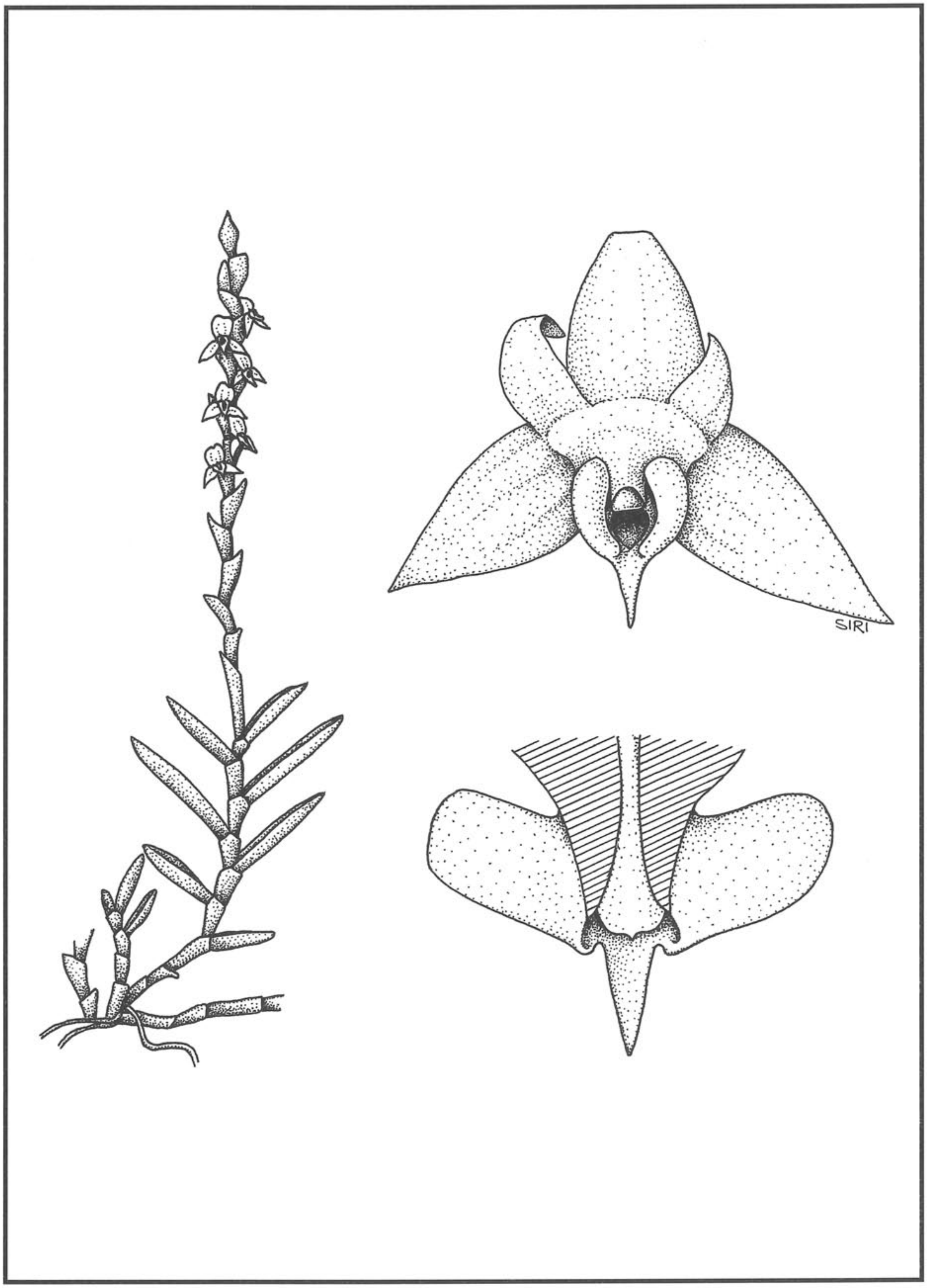
ETYMOLOGY: From the Latin, *infundibulus*, funnel-shaped, in reference to the characteristic funnel-shaped floral bracts which distinguish this species.

NOTE: Many of the specimens from Panama annotated by Barringer (see Barringer, 1991) as *E. muscicolum* correspond to *E. infundibulum*. *Epidendrum muscicolum* has taller stems and somewhat larger flowers (sepals 3-6 mm long).

REFERENCES: Barringer, K., 1991, A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae), **Brittonia** 43(4): 245-247. Dressler, R. L., 1983, Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá, **Orquídea (Mexico City)** 9(1): 13-19.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM INSOLATUM Barringer

Plate 947

EPIDENDRUM INSOLATUM Barringer, Brittonia 43(4): 245. 1991.

Basionym: *Epidanthus crassus* Dressler, Orquídea (Mexico City) 9(1): 15. 1983.
Type: PANAMA: Coclé: N of Aserradero El Copé, 9-10 km N of El Copé, Atlantic slope, 800-900 m, 1 IX 1977, ***Robert L. Dressler 5686,*** (Illustration voucher). Holotype: US Isotypes: F! MO! PMA. *Epidendrum crassus* (Dressler) Mora Retana & J. García, Brenesia 33: 124. 1990. Not *Epidendrum crassum* C. Schweinf. (1952).

Hierba epífita, simpodial, cespitosa, 7.5-13 cm de alto. **Raíces** originandose en la base de cada tallo, escasas, muy delgadas, blancas. **Tallos** sencillos, producidos de los entrenudos basales del tallo anterior, tipo caña, delgados, erectos, rectos, 3-5 x 0.25-0.3 cm. **Hojas** 3-10, distribuidas a todo lo largo del tallo, alternas, subteretes; vaina tubular, algo inflada en el ápice sin llegar a ser infundibuliforme, el ápice con un apéndice pequeño, angostamente triangular, agudo, opuesto a la lámina foliar, 3-6 x 2.5-3 mm; lámina oblongo elíptica, subaguda, carnoso coriácea, margen entero, 0.9-2.3 x 0.2-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, pauciflora, erecta, 4-10 cm de largo; pedúnculo lateralmente aplanado, recto, ca. 12 mm de largo; provisto de 1 o 2 brácteas semejantes a las florales, angostamente triangulares, agudas, amplexicaules, 4-5 mm de largo; raquis ligeramente fractiflexo. **Brácteas florales** más largas que el ovario, amplexicaules en la base, triangulares, agudas, con una quilla dorsal laminar alta en el ápice, 2.5-3 mm de largo. **Ovario** terete, delgado, liso, ca. 1 mm de largo. **Flores** 7-10, resupinadas, dísticas, subsésiles, sucesivas, (aunque unas 6 llegan a estar abiertas de manera simultánea) concoloras, de color ocre; sin datos de fragancia. **Sépalos** libres, ovado triangulares, agudos, con una quilla dorsal diminuta, 3-nervados, margen entero, 2.8 x 1.3-1.4 mm; el **dorsal** reflexo; los **laterales** extendidos. **Pétalos** reflexos, libres, lanceolados, subagudos, margen entero, 2-2.2 x 0.7 mm. **Labelo** unido a la columna, 3-lobado, base cordada, margen entero, 2.5-3 x 1.7-2 mm; unicalloso, el callo laminar, truncado, diminutamente apiculado, disco desprovisto de quillas; lóbulos laterales insertados cerca de la base de la columna, rectangular oblongos, redondeados, abrazando a la columna en posición natural (sin envolverla por completo), 1.5 x 0.9 mm, lóbulo medio angostamente triangular, acuminado, 0.9 x 0.4 mm. **Columna** corta, gruesa, ca. 1 mm de largo. **Clinandrio** corto, margen entero. **Antera** no vista. **Polinios** 2, subesféricos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** originating from the base of each stem, scarce, very thin, white. **Stems** simple, produced from the basal internodes of the previous stem, cane-like, thin, erect, straight. **Leaves** 3-10, distributed throughout the stem, alternate, subterete; sheath tubular, somewhat inflated towards the apex without being infundibuliform, with a small, narrowly triangular, acute appendix opposite the blade; blade oblong-elliptic, subacute, fleshy-coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, few-flowered, erect; peduncle laterally compressed, straight, provided towards the middle with 1-2 bracts similar to the floral bracts; rachis slightly zigzag. **Floral bracts** longer than the ovary, amplexicaul at the base, triangular, acute, with a high dorsal keel towards the apex. **Ovary** terete, thin, smooth. **Flowers** 7-10, resupinate, distichous, subsessile, successive (though up to 6 may be open at one time), dull ochre colored, concolor. **Sepals** free, ovate-triangular, acute, with a minute dorsal keel, 3-veined, margin entire; the dorsal sepals reflexed, the lateral sepals spreading. **Petals** reflexed, free, lanceolate, subacute, margin entire. **Lip** united to the column, 3-lobed, base cordate, margin entire; callus single, laminar, truncate, minutely apiculate, disc without keels; lateral lobes inserted towards the base of the column, rectangular-oblong, rounded, embracing the column without covering it; midlobe narrowly triangular, acuminate. **Column** short, thick. **Clinandrium-hood** short, margin entire. **Pollinia** 2, subsphaerical, caudicles about as wide as the pollinia. **Rostellum** apical, slit.

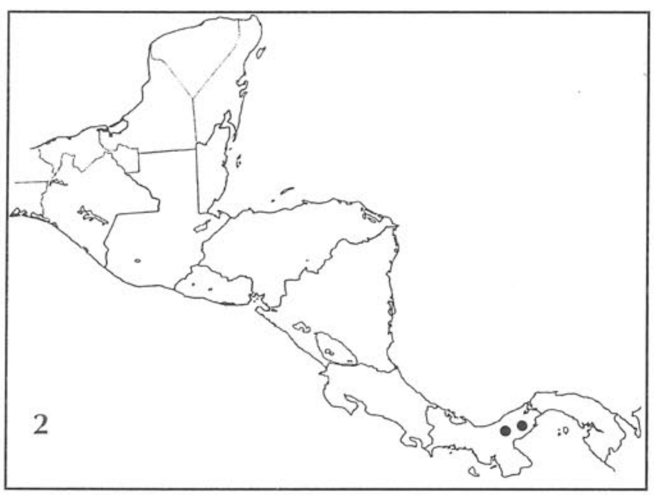
OTHER SPECIMENS: PANAMA: Coclé: al Noroeste de El Valle de Antón, 550-600 m, 27 III 1977, *Dressler 5620*, PMA.

DISTRIBUTION AND ECOLOGY: Endemic from central Panama, epiphytic in the tree-tops, at 550-900 m altitude. Flowering in March and September.

RECOGNITION: *Epidendrum insolatum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the small plants, robust stems compared to the rest of the group, oblong-elliptic, very fleshy-coriaceous leaves, the dull ochre, concolor flowers, with the dorsal sepals and petals reflexed. All other species of this group have delicate, thin, narrow leaves and grow in moss covered branches where they are shaded from full sun.

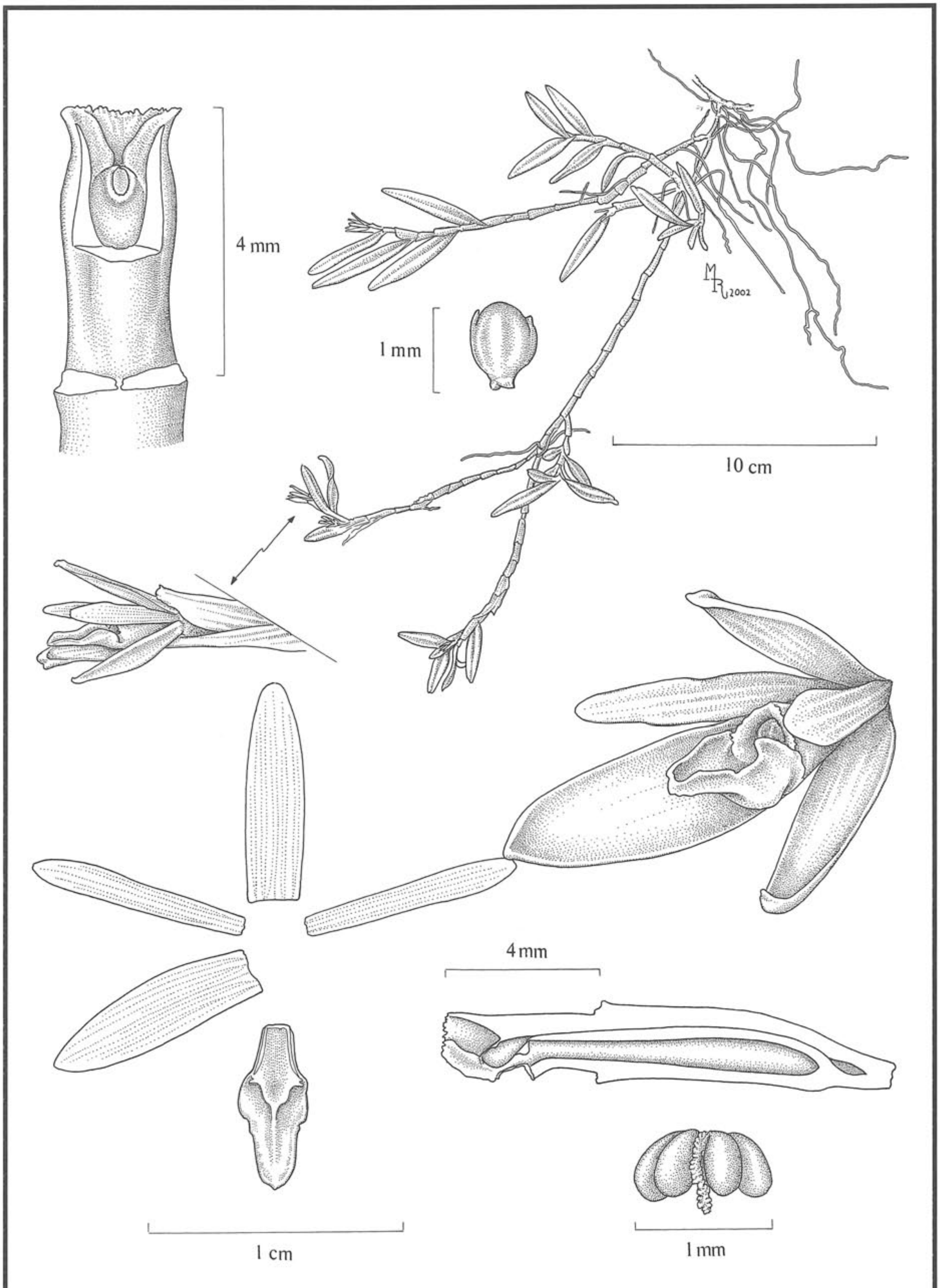
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *insolatus*, exposed to the sun, in reference to fact that the plants grow on tree-tops, where they receive plenty of sun and dry out between rains.



REFERENCES: Barringer, K., 1991, A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae), **Brittonia** 43(4): 245. Dressler, R. L., 1983, Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá. **Orquídea (Mexico City)** 9(1): 13-19. Dressler, R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama**, Cornell University Press, p. 83.

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EPIDENDRUM INSULANUM Schltr. Plate 948

EPIDENDRUM INSULANUM Schltr., Beih. Bot. Centralbl. 36(4): 404. 1918.

Type: COSTA RICA: Isla del Coco; Cordon Litoral, Wafer Bay, January 1902, ***H. Pittier 16350***. Holotype: B, destroyed; tracing of holotype at AMES! Lectotype [designated by M. Blanco, 2005]: GH 3580 (AMES 73449)! Isotypes: GH 3579!, GH 3581!, CR x2!

Hierba epífita, monopodial, colgante, 30-60 cm o más de alto. **Raíces** producidas de los nodos basales del tallo principal y de las ramas, filiformes, carnosas, 0.3-0.8 mm de grosor. **Tallos** ramificados y sucesivos, tipo caña, flexuosos, teretes, delgados, el principal 10-30 x 1.5-4.0 mm, los tallos secundarios más cortos, 4.0-10 cm de largo. **Hojas** numerosas, distribuidas a todo lo largo de los tallos, vaina foliar tubular, estriada, hasta 2.1 cm de largo, láminas linear elípticas, bilobadas, las del tallo principal, más o menos iguales, 4.0-7.5 × 0.6-1.2 cm, las de las ramas desiguales, más cortas que las del tallo principal, 1.7-4.0 × 0.6-0.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del las ramas, racemosa, dística, 2.0-3.0 cm de largo; pedúnculo muy reducido. **Brácteas florales** conduplicadas, ligeramente más largas que los ovarios, ovadas, 10.0-11.0 mm largo. **Ovario** inflado ventralmente casi hasta la base, terete, 6.5-7.0 mm de largo. **Flor** solitaria, verde limón, fragancia no registrada. **Sépalos** entreabiertos, libres, glabros, subcoriáceos, angostamente ligulado elípticos, redondeados, 5-nervados, las nervaduras laterales divididas cerca de la base, margen entero, revoluto, 8.0-10.0 × 2.5-3.0 mm. **Pétalos** entreabiertos, glabros, membranáceos, linear obovados, redondeados, 3-nervados, las venas laterales divididas de manera que parecen 5-7 nervados, margen entero, revoluto, 7.0-9.0 × 1.7-2.0 mm. **Labelo** unido a la columna, ovado, subcoriáceo, algo constreñido en la parte media, base redondeada, ápice mucronado, 5.0-6.5 × 2.5-4.5 mm; callo único, en forma de "Y", el cual se prolonga en una quilla roma hasta cerca del ápice del labelo. **Columna** recta, gruesa, 4.0-5.0 mm de largo. **Clinandrio** prominente, dentado. **Antera** 4 locular, reniforme, cóncava con una quilla roma al centro. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del doble de largo que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales el estigma** cortos, de 1/3 de la cavidad estigmática. **Nectario** profundo, penetrando 3/4 del ovario, liso. **Cápsula** ovoide, 18 mm de largo; cuerpo 12 x 8 mm; cuello apical no evidente.

Epiphytic, monopodial, pendent **herb. Roots** produced from the basal nodes of the main stem and the branches, filiform, fleshy. **Stems** branching and successive, flexuous, terete, thin, the main stem longer than the branches. **Leaves** numerous, distributed throughout the stems, sheath tubular, striated; blade linear-elliptic, bilobed, those of the main stem larger than those of the branches. **Inflorescence** apical, produced from the branches, racemose, distichous; peduncle much reduced. **Floral bracts** conduplicate, slightly shorter to longer than the ovary, ovate. **Ovary** inflated ventrally nearly to the base, terete. **Flower** solitary, lemon-green. **Sepals** partly spreading, free, glabrous, subcoriaceous, narrowly ligulate-elliptic, rounded, 5-veined, margin entire, revolute, the lateral veins split near the base. **Petals** partly spreading, glabrous, membranaceous, linear-obovate, rounded, 3-veined, the lateral veins split so as to appear 5-7-veined, margin entire, revolute. **Lip** united to the column, ovate, subcoriaceous, somewhat constricted in the middle, base rounded, apex mucronate; callus single, "Y" shaped, prolonged into a rounded keel to near the apex of the lip. **Column** straight, thick. **Clinandrium hood** prominent, dentate. **Anther** 4-celled, reniform, concave with a low keel in the center. **Pollinia** 4, semiovoid, laterally compressed, subequal; caudicles soft and granulose, twice as long as the pollinia; viscidium semiliquid, transparent. **Rostellum** subapical, split. **Nectary** deep, penetrating ¾ of the ovary, smooth. **Capsule** ovoid, with a short apical neck.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica: Cocos Island nearly halfway between the mainland and the Galapagos Islands. Epiphyte in Rain Forest. From 0 to 300 m altitude. Flowering from January to July.

RECOGNITION: *Epidendrum insulanum* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by terete stems, short secondary stems, 4-10 cm long, a single, lemon-green flower, the lip ovate, apex mucronate. The species shares the Cocos Island with *E. jimenezii* Hágsater which has long laterally flattened stems which produce short secondary flowering stems with 1-3 white to greenish white flowers with 3-veined sepals; and *E. cocoënse* Hágsater which has 15-30 cm long stems which produce a new stem from near the apex, leaves 7-15 x 1.3-2 cm, lemon-yellow flowers, sepals 10-12 mm long, the column with two acute teeth at the apex. Of the mainland species, *E. flexicaule* has longer, leaves up to 8.2 cm long, 2-3 larger flowers, the sepals 9-12 mm, lip 7 x 6 mm. *Epidendrum stevensii* has 2-3, smaller flowers, sepals 6-8 mm long, acute floral segments, with the lip triangular, narrowed above the middle, the apex acute. *Epidendrum modestiflorum* has consistently shorter (< 5 cm), wider leaves, (up to 15 mm), 2-3 flowers with relatively larger sepals 11 mm long, the lip constricted below the middle, and the deep nectary without forming a prominent vesicle. *Epidendrum veraguasense* Hágsater from Panama, has 2-3, large, white flowers, a larger lip, 8 x 6 mm, constricted above the middle, and the nectary only penetrates half the ovary and forms a prominent vesicle behind the perianth.



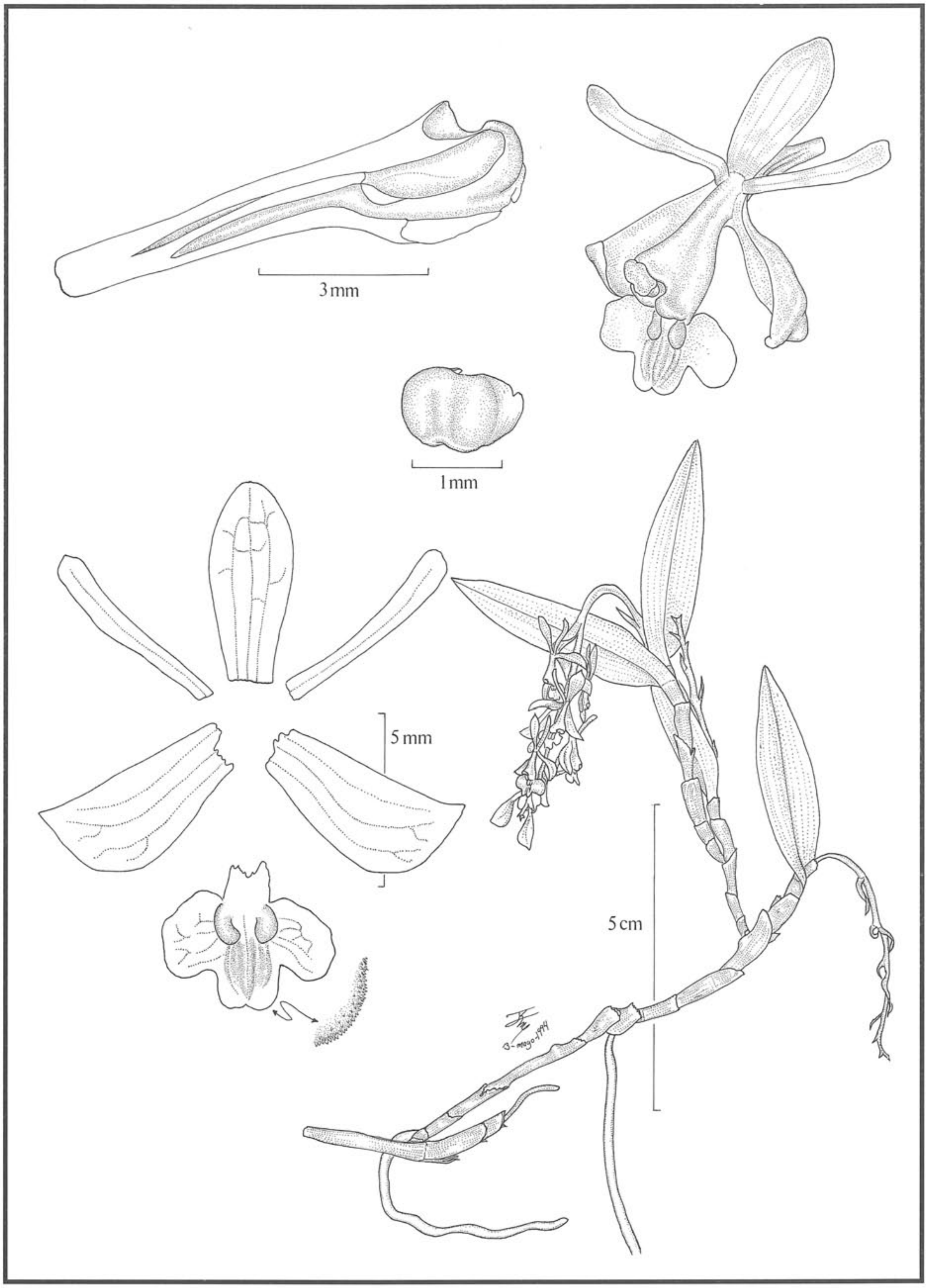
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *insula*, Island, in reference to the insular range of distribution of the species, endemic to the Cocos Island.

REFERENCES: Trusty, J., & M. A. Blanco, 2005, Las Orquídeas de la Isla del Coco, *Epidendrum* 27: 10-15.

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EPIDENDRUM KARSTENII Rchb.f. **Plate 949**

EPIDENDRUM KARSTENII Rchb.f., Linnaea 41: 37. 1877.

Type: COLOMBIA: [Cundinamarca:] Bogotá, 8100 ft, ***K. Karsten s.n.*** Holotype: W!

Hierba epífita, de simpodio erecto donde cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior, 20-26 cm de alto. **Raíces** de la base de cada tallo, carnosas, gruesas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 2.5-6 x 0.2-0.3 cm. **Hojas** 1-3, agrupadas hacia el ápice del tallo; vaina tubular, estriada y menudamente verrugosa, 0.6-1.2 cm de largo; lámina articulada, angostamente elíptico lanceolada, aguda, margen entero, subcoriácea, lisa, 2.5-10 x 0.7-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, nutante, 3.5-5 cm de largo; brácteas del pedúnculo 0-1, acuminadas, 7 mm de largo, pedúnculo prominentemente bialado, las alas prolongándose en las brácteas florales. **Bráctea floral** del largo del ovario o más corta, triangular acuminada, 2.5-5 mm de largo. **Flores** 8-10, simultáneas, resupinadas, coloración verdosa a morado parda oscura cuando a pleno sol; fragancia ninguna. **Ovario**, delgado, terete, no ornamentado, 4-6 mm de largo. **Sépalos** libres, angostamente obovados, glabros, carnosos, 3-nervados, margen extendido; el **dorsal** reflexo, redondeado, 6-7 x 2.5 mm; los **laterales** extendidos, subagudos, oblicuos, con una quilla dorsal roma, el margen superior recto, 6-7 x 2.5-3 mm. **Pétalos** extendidos, linear ligulados, ápice redondeado, 1-nervados, margen entero, 6 x 0.7 mm. **Labelo** unido a la columna, trilobado, base algo cordada, bicalloso, callos prominentes, subesféricos, algo lateralmente comprimidos, con tres carinas romas recorriendo el lóbulo medio, 3.5-4.5 x 5-6 mm; lóbulos laterales semiobovados, lóbulo medio subcuadrado, ligeramente emarginado, márgenes enteros. **Columna** recta, dilatada hacia el ápice, con un lóbulo apical a cada lado arriba de los callos, 5.0-5.5 mm de largo. **Clinandrio** corto, margen entero. **Nectario** profundo, penetrando la mitad del ovario, no ornamentado. **Antera** reniforme, 4-locular. **Polinios** 4, subglobosos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de 1/3 del largo de la cavidad estigmática. **Cápsula** no vista.

Epiphytic, erect **herb**, with the new stem produced from an intermediate internode of the previous stem. **Roots** fleshy, from the base of each stem. **Leaves** 1-3, narrowly elliptic-lanceolate, acute, subcoriaceous; leaf-sheaths striate, minutely verrucose. **Inflorescence** apical from the mature stem, nodding, racemose, peduncle prominently 2-winged, the wings prolonged into floral bracts, flowers only once. **Floral bracts** triangular acuminate, as long as the ovary. **Flowers** 8-10, simultaneous, resupinate, greenish to dark purple-brown when in full sun. **Ovary** thin, not inflated. **Sepals** narrowly obovate, 3-veined; the **dorsal** rounded; the **laterals** subacute. **Petals** ligulate, apex rounded, 1-veined. **Lip** 3-lobed, base somewhat cordate, bicallose with 3 rounded keels running down the midlobe; lateral lobes semiobovate, midlobe subquadrate, somewhat emarginate. **Column** straight, with a pair of apical lobes above the calli. **Clinandrium-hood** short, entire. **Nectary** penetrating half of the ovary. **Anther** reniform, 4 celled. **Pollinia** 4, subglobose. **Rostellum** apical, slit.

OTHER SPECIMENS: COLOMBIA: Cundinamarca; Sasaima; vereda San Bernardo, Quebrada La María, 1660 m, *García-Barriga 20384*, US! La Calera, *Hágsater 11516*, AMO! Entre Zipaquirá y Cogua, 2690 m, 5 XI 1942, *Huerta 17*, AMES! (Illustration voucher). Sibaté, *Lehmann 7605*, AMES! K! Bogotá, 2700 m, *Triana 570*, P! **Boyacá:** "La Capilla", Villa de Leyva, 2700 m, *Ortiz Valdivieso 160*, HPUJ! (also line drawing, xerox AMO!) **Magdalena:** [San Sebastian de Rábago] Granja Ovina de Tayronaca, 5 III 1948, *Romero 866*, COL! US!

DISTRIBUTION AND ECOLOGY: Colombia: Common on trees in wet, low forests on mountains in Cundinamarca and Boyacá north of Bogotá, and the southern flank of the Sierra Nevada de Santa Marta, Magdalena, at 2600-2900 m altitude. Flowering in December-March, in fruit in July.

RECOGNITION: *Epidendrum karstenii* belongs to the Arbuscula Group, Incomptum Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregated towards the apex of the stems, a short apical inflorescence with fleshy greenish to violet-green flowers with short ovaries, the lip entire to 3-lobed. The species can be recognized by small plants, 1-3 leaves per stem, the simultaneous flowers forming a compact, cylindrical, nodding, inflorescence, the 3-lobed lip with the apical lobe subquadrate and somewhat emarginate, the flowers small, sepals 6-7 mm long, the ligulate petals and straight column. It is somewhat comparable to *E. curtisii* A. D. Hawkes, but that species is much larger overall, the inflorescence forms a compact spherical raceme, sepals being over 10 mm long, the sepals are oblanceolate, and the proportions of the lip quite different, the midlobe being much wider than long, and the lateral lobes suborbicular. The narrow, cylindrical raceme is shared by *Epidendrum stenostachyum* Hágsater & E. Santiago, also from the Sierra Nevada, and which has a different growth mode, with a long, monopodial main stem and numerous subapical branches, the lip is entire, slightly retuse at the apex.

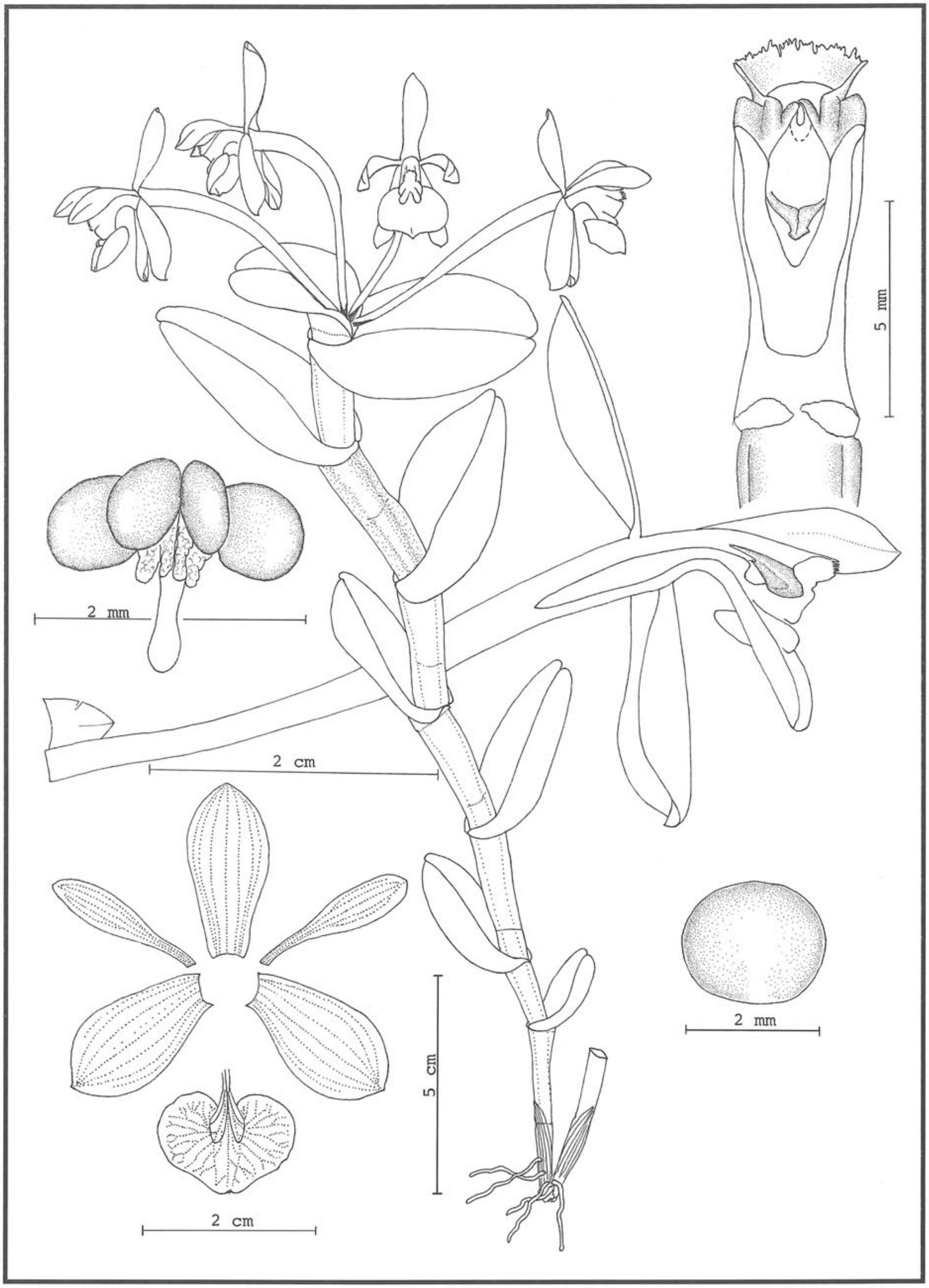
CONSERVATION STATUS: Not threatened. The top of mountains in the area seem to be under little pressure and the species is common there. It is uninteresting in horticulture.

ETYMOLOGY: In reference to K. Karsten, a German collector, who collected the type specimen and sent it to Reichenbach in Vienna.



Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM KERICHILUM Hágsater

Plate 950

EPIDENDRUM KERICHILUM Hágsater, Orquídea (Mexico City). 11: 26-27, fig. p. 35, 1989.

Type: PANAMÁ: Chiriqui: Cerro Horqueta, detrás de Boquete, arriba de David, al E del volcán Barú, 1700-2300 m, colectada marzo 1981, prensado de material cultivado 4 junio 1981, ***Eric Hágsater & Robert L. Dressler 6519.*** Holotype: AMO! (Illustration voucher). Isotypes: K! MO! Clonotypes: pressed 27 junio 1983, PMA! pressed 13 agosto 1986, AMES!

Hierba epífita, simpodial, cespitosa, 20-30 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, flexuosos, 18-23 x 0.3-0.6 cm. **Hojas** 7-13, distribuidas a lo largo del tallo; vaina foliar tubular, lateralmente comprimida, lisa, 1.5-2.5 cm de largo; lámina lanceolada a anchamente elíptica, ápice retuso, subcoriácea, lisa, verde, margen entero, 3-6.5 x 1.3-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical en el tallo maduro, florece una sola vez, corimbosa, pedúnculo inconspicuo. **Bráctea floral** mucho más corta que el ovario, conduplicada, triangular, aguda, 4-6 x 2.3-3 mm. **Flores** 3-4, simultáneas, resupinadas, verde pálido, labelo amarfilado, lustroso; de fragancia dulce. **Ovario** terete, no inflado, no ornamentado, 40-55 x 1-1.5 mm. **Sépalos** extendidos, libres, obovados, obtusos a redondeados, subcoriáceos, glabros, margen entero, revoluto, el **dorsal** 5-nervado, con un par de nervaduras secundarias exteriores, 16-20 x 7-9 mm, los **laterales** 7-nervados, 16-18 x 7-10 mm. **Pétalos** paralelos a la columna, angostamente obovados oblanceolados, obtusos a redondeados, membranáceos, margen entero, extendido, 3-nervados, las nervaduras laterales ramificadas arriba de la mitad, 16-18 x 4-5 mm. **Labelo** unido a la columna, cordiforme, margen entero, ápice entero a ligeramente emarginado, 10-12 x 13-16 mm; bicalloso, los callos alargados, carnosos; lámina engrosada al centro. **Columna** arqueada en su parte media, 12-13 x 1.5-2 mm. **Clinandrio** prominente, margen eroso dentado. **Antera** subesférica, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, algo más pequeñas que los polinios; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes de 1/2 del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/4 del ovario, liso. **Cápsula** no vista.

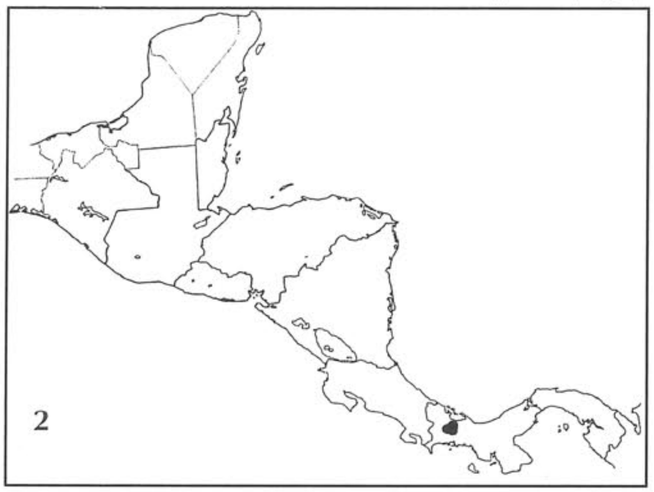
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, somewhat laterally compressed, flexuous. **Leaves** 7-13, distributed throughout the stems; sheath tubular, laterally compressed, smooth; blade lanceolate, to widely elliptic, apex retuse, subcoriaceous, smooth, green, margin entire. **Inflorescence** apical, from the mature stem, flowering only once, corymbose, peduncle inconspicuous. **Floral bract** much shorter than the ovary, conduplicate, triangular, acute. **Flowers** 3-4, simultaneous, resupinate, pale green, the lip ivory-colored, lustrous; fragrance sweet. **Ovary** terete, not inflated, smooth, long. **Sepals** spreading, free, obovate, obtuse to rounded, subcoriaceous, glabrous, margin entire, revolute, the dorsal sepal 5-veined, with a pair of exterior secondary veins, the lateral sepals 7-veined. **Petals** parallel to the column, narrowly obovate, oblanceolate, obtuse to rounded, membranaceous, margin entire, spreading, 3-veined, the lateral veins branching above the middle. **Lip** united to the column, cordiform, margin entire, apex entire to slightly emarginate; bicallose, the calli elongate, fleshy; blade thickened in the middle. **Column** arching in the middle. **Clinandrium-hood** prominent, margin erose-dentate. **Anther** subsphaerical, 4-celled. **Pollinia** 4, subequal, obovoid, laterally compressed; caudicles soft and granulose, somewhat shorter than the pollinia; viscidium viscous, translucent. **Rostellum** subapical, slit. **Nectary** short, penetrating about 1/4th of the ovary, smooth.

OTHER SPECIMENS: PANAMÁ: Chiriquí: Between Boquete y Monte Rey, 20 VII 1971, *Croat 15821,* MO! Ibid. *Croat 15822,* MO! Boquete, Bajo Chorro, 6000 ft, 22 I 1938, *Davidson 182,* AMES! F! US! Ibid. 23 II 1938, *Davidson 316,* F! MO!

DISTRIBUTION AND ECOLOGY: Endemic from western Panama, around Boquete. Epiphytic in tropical subdeciduous forest and cloud forest at 1700-2300 m altitude. Flowering from January to March.

RECOGNITION: *Epidendrum kerichilum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green, rarely white flowers. The species can be recognized by the somewhat laterally compressed stems, 3-4 pale green flowers, the lip entire, cordiform, of a waxy nature, ivory-colored and lustrous, the column arched in the middle, prominent clinandrium-hood with the margin erose-dentate. It is similar to *E. odontochilum* Hágsater which is found along the Atlantic slope of Costa Rica and Panama, has the veins of the leaves clearly marked, a 3-lobed lip, with the margins of the lateral lobes dentate, the column with a prominent tooth on each side, and the clinandrium-hood deeply fimbriate. *Epidendrum storkii* Ames is common from central Costa Rica to central Panama, also has evidently marked veins of the leaves, and a 3-lobed lip with a very short midlobe recessed in between the lateral lobes, subquadrate at the base and triangular a the apex, and the clinandrium-hood deeply fimbriate

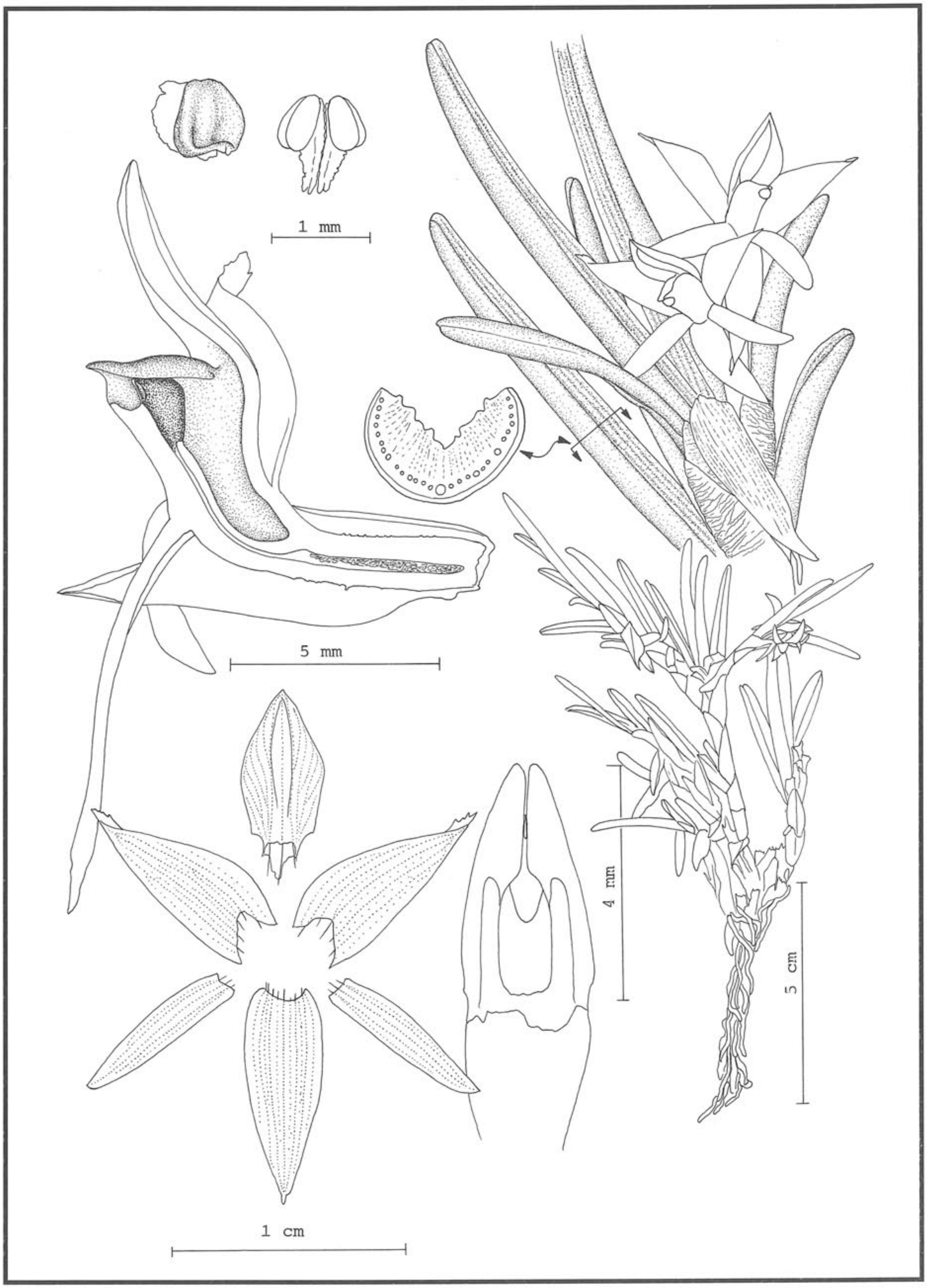
CONSERVATION STATUS: DD: Data deficient. Apparently highly endemic and rare.



ETYMOLOGY: From the Greek κερι, wax, and χειλος, lip, in reference to the waxy appearance of the thickened, ivory-colored lip which distinguishes this species from other similar species which may be thickened but are either green or white but never waxy.

REFERENCES: Hágsater, E. 1989. *Epidendra novae et criticae 4*: Nuevas especies del complejo *Epidendrum difforme* de México y Centroamérica. **Orquídea (Mexico City)** 11: 26-27.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM LANCILABIUM Schltr. **Plate 951**

EPIDENDRUM LANCILABIUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 38. 1923.

Type: COSTA RICA: La Palma, im Jahre 1922, ***C. Wercklé 115.*** Holotype: B, destroyed, photo AMES 39891!

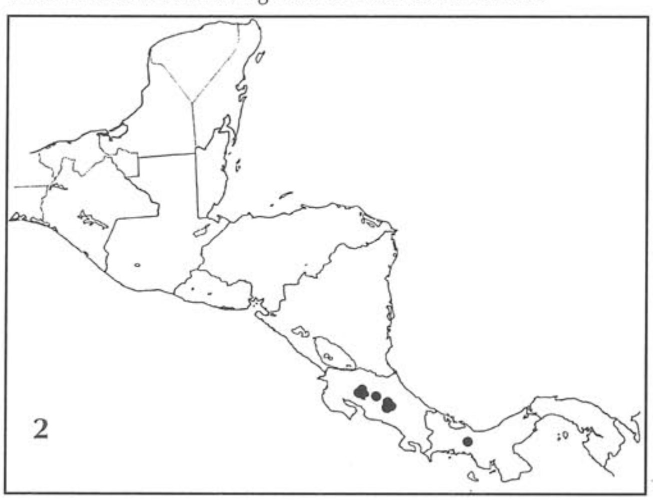
Hierba epífita, monopodial, ramificada, erecta, 20-30 cm de alto. **Raíces** basales filiformes a delgadas, 0.5-1.3 mm de grosor. **Tallos** ramificados, tipo caña, teretes, erectos, en plantas maduras frecuentemente inclinándose, con las nuevas ramificaciones arqueadas hacia arriba; frecuentemente cubiertos completamente por grandes vainas rugosas, escariosas, el tallo principal fuertemente flexuoso, hasta de ca. 15 x 0.55 cm, ramificaciones secundarias hasta de 6 cm de largo, con ramificaciones florales muy cortas, hasta de 2 x 0.25 cm. **Hojas** hasta 8 en el tallo principal, 2-3 en las ramas florales; vaina foliar tubular, rugosa, 0.5-1 cm de largo; lámina foliar erecta, semiterete, acanalada, linear, ápice desigualmente bilobado, las del tallo principal más largas que las de las ramas florales, 3-7 x 0.15-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, dística, erecta, 1-2 cm de largo; pedúnculo muy reducido, terete, raquis corto, fractiflexo. **Brácteas florales** más largas que el ovario, lanceolado ovadas, agudas, 10-12 mm de largo. **Flores** 2, simultáneas, no resupinadas, el labelo siempre orientado hacia el raquis, verde moradas, el labelo y la columna morados; sin fragancia. **Ovario** no inflado, terete, diminutamente papiloso, forma un ángulo de ca. 90° con respecto a la columna, 4-5 mm de largo. **Sépalos** libres, glabros, extendidos, ovado lanceolados, atenuados, 9-11 nervados, margen entero, revoluto, 8-9 x 2.8-3.2 mm; los laterales oblicuos, aristados, con una quilla dorsal dentada apicalmente. **Pétalos** libres, glabros, extendidos, angostamente oblongo lanceolados, agudos, 3-nervados, los nervios laterales bifurcados dando la apariencia de ser 5-nervados, margen entero, extendido, 7-8 x 1-2 mm. **Labelo** unido a la columna, entero, lanceolado romboide, base truncada, ápice, agudo, 4.5-7.2 x 2.8-3 mm; ecalloso, disco con una quilla gruesa, la cual se prolonga hasta cerca del ápice. **Columna** recta, 3-4.5 mm, el ápice dilatado con los márgenes apicales involutos. **Clinandrio** reducido, entero. **Antera** subesférica, con un pico apical ancho, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas más largas que los polinios, viscidio blanquecino, semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** ausentes. **Nectario** corto, penetrando 1/3 del ovario, amplio, liso. **Cápsula** no vista.

Epiphytic, monopodial, branching, erect **herb. Roots** basal, filiform to thin. **Stems** branching, cane-like, terete, often completely covered by large, rugose, scarious sheaths; the main stem erect, strongly flexuous, up to ca. 15 cm tall, often reclining with age, and then new branches arching upwards; secondary stems up to 6 cm long, floral branches very short, up to 2 cm long. **Leaves** up to 8 on the main stem, 2-3 on the floral branches; sheaths tubular, rugose; blade erect, semiterete, sulcate, linear, apex unequally bilobed, those of the main stem longer than those of the floral branches. **Inflorescence** apical, racemose, distichous, erect; peduncle very short, terete, rachis short, zigzag. **Floral bracts** longer than the ovary, ovate-lanceolate, acute. **Flowers** 2, simultaneous, non-resupinate, the lip always facing the rachis, purple-green, the lip and column purple, not fragrant. **Ovary** not inflated, terete, minutely papillose, forming an angle of nearly 90° with the column. **Sepals** free, glabrous, spreading, ovate-lanceolate, attenuate, 9-11-veined, margin entire, revolute; the lateral sepals oblique, aristate, with an apically dentate dorsal keel. **Petals** free, glabrous, spreading, narrowly oblong-lanceolate, acute, 3-veined, the lateral veins bifurcate at the base and thus appearing 5-veined, margin entire, spreading. **Lip** united to the column, entire, lanceolate-rhombic, base truncate, apex acute; ecallose, disc with a thick, rounded keel running down nearly to the apex. **Column** straight, apex dilated, the apical margins involute. **Clinandrium-hood** reduced, entire. **Anther** subsphaerical, with a wide, apical beak, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles longer than the pollinia; viscidium whitish, semiliquid. **Rostellum** apical, slit. **Nectary** short, penetrating 1/3 of the ovary, wide, smooth.

OTHER SPECIMENS: COSTA RICA: La Palma de San Ramon, 1180 m, 18 IX 1924, *Brenes 2350(21)*, CR! Cordillera Central, Alta Division Continental, entre Rosarito y Vara Blanca de Sarapiqui, 2350 m, 20 XI 1983, *Hágsater 7129*, AMO! (Illustration voucher.) ENCB! INB! MEXU! Desviacion Hacienda La Lucha, 500 m de la carretera, 19 VII 1986, *Hágsater 8391*, AMO x2! La Estrella, 9 I 1923, *Lankester 391*, AMES! Ibid. 22 VII 1924, *Lankester 1033*, AMES x2! Vara Blanca, 2000 m, 27 XII 1931, *Mansfeld 283*, M! **Alajuela:** Palmira, Region of Zarcero, 13 VI 1938, *Smith 103*, AMES! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 47817*, AMES! US! Ibid. *Standley 47718*, AMES! US! **Cartago:** Without locality, 26 III 1924, *Standley 39499*, US! La Castilla along road to Orosí, near Las Cóncavas, 30 VII 1955, *Lankester s.n.*, SEL! El Muñeco south of Navarro, ca. 1400 m, 8 II 1924, *Standley 33775*, AMES! US! Ibid. *Standley 33784*, AMES! US! Ibid. *Standley 33891*, AMES! US! La Estrella, 27 III 1924, *Standley 39387*, AMES! El Muñeco on the rio Navarro, 1400-1500 m, 6 III 1926, *Standley 51770*, AMES! **Heredia:** Cerca de Varablanca, 5 XII 1984, *Dressler 260*, USJ! San Rafael de Varablanca, 3 II 1970, *Dressler 3795*, AMO! Above Rio San Rafael, 3 km W of Vara Blanca, 1750 m, 8 VIII 1971, *Lent 2042*, AMES! F! MO! **Puntarenas:** Monteverde, tv towers, 1700 m, 9 III 1989, *Atwood 89-44*, MO! Monteverde, upper community, Guindon property, 1425-1500 m, 2 XII 1989, *Atwood 4062*, F! Reserva Monteverde, 4 XI 1984, *Dressler 135*, USJ! Monteverde, 1400-1700 m, 16 X 1978, *Todzia 300*, CR! **San José:** Near San Cristobal, 1800 m, 22 VI 1981, *Luer 6390*, SEL! **PANAMA: Chiriquí:** Cerro Colorado, ca 50 km NO of San Felix, ca. 1400 m, 20 IX 1977, *Dressler 5723*, AMO x2!

OTHER RECORDS: COSTA RICA: 9 VII 1964, Illustration by Rafael Lucas Rodríguez (slide AMO!)

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica and western Panama. Epiphyte in rain forest, from 1000 to 2350 m altitude. Flowering from October to December.



RECOGNITION: *Epidendrum lancilabium* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by its short plants, semiterete, linear, erect leaves, 2-flowered inflorescence, the flowers purple-green, with the ovary minutely papillose and forming a 90° angle with the column, the lip lanceolate-rhombic, acute. By the linear, semiterete leaves. It is similar to *Epidendrum ramosissimum* Ames & C.Schweinf., but the habit of that species is very different, with a clearly defined, tall main stem, clearly visible secondary stems, white to creamy-green flowers, the lanceolate, acuminate sepals, linear petals and the triangular, acuminate lip.

CONSERVATION STATUS: DD. (Data deficient).

ETYMOLOGY: From the Latin *lanceolatus,* in the shape of a lance, with curved sides, and broadest below the middle, and *labium*- lip, in reference to the lanceolate lip.

REFERENCES: Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Vol. III, Missouri Botanical Garden, p. 138.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM LANKESTERI Ames

Plate 952

EPIDENDRUM LANKESTERI Ames, Schedul. Orchid. 4: 45. 1923.

Type: COSTA RICA: [San José] Cascajal, 5500 ft altitude, July 1919, ***Charles H. Lankester 63.*** Holotype: K!

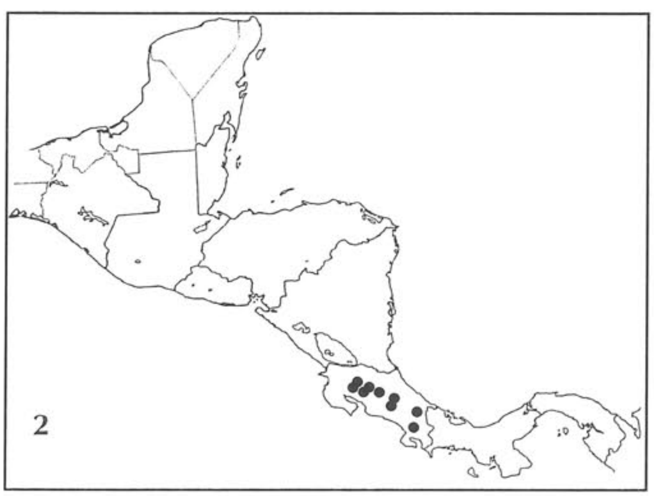
Hierba epífita, simpodial, cespitosa, erecta 50-80 cm de alto. **Raíces** producidas a lo largo de los entrenudos basales, carnosas, delgadas, blancas, de 0.7-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados arriba, erectos, rectos, 23-53 x 0.25-0.6 cm. **Hojas** 7-9, distribuidas a lo largo del tallo, articuladas, alternas, suberectas; vaina tubular, estriada, 2-7 x 0.5-1 cm; lámina angostamente elíptica a lanceolada, acuminada, margen entero, [5.5]9-27 x 1.5-3 cm. **Bráctea espatácea** 1, en el ápice del pedúnculo, ovado lanceolada, aguda, tubular en la base y conduplicada en el ápice, 1.8-3 cm de largo. **Inflorescencias** comúnmente apicales y ocasionalmente laterales, racemosas, pudiendo florecer varias veces del mismo pedúnculo y entonces pluriracemosas, plurifloras, densas; la apical erecta, 14.5-31 cm de largo; las laterales sésiles, 4.5-9.5 cm de largo; pedúnculo erecto, recto, ancipitoso, bialado, las alas gradualmente más angostas hacia el ápice, 8-21.5 cm de largo; raquis generalmente oculto en su totalidad por las brácteas florales, 2-15 cm de largo. **Brácteas florales** más cortas que el ovario, ovado-elípticas, redondeadas, diminutamente apiculadas, conduplicadas, imbricadas a subimbricadas, glumáceas y en ocasiones dejando al raquis parcialmente expuesto cuando secas, de color verde claro algo manchadas de color púrpura cerca del ápice, persistentes aún sin flores, 5-11 mm de largo. **Ovario** terete, delgado, liso, 15-22 mm de largo. **Flores** 6-30, sucesivas, abiertas una a la vez por racimo, resupinadas, de color verde o blanco verdoso tornándose rojizas con el tiempo; sin datos de fragancia. **Sépalos** extendidos, libres, oblanceolados, agudos, diminutamente apiculados, carnosos, margen entero, extendido, 13-16 x 3-5 mm; el **dorsal** 3-nervado, los **laterales** oblicuos, 5-nervados. **Pétalos** entreabiertos, libres, algo falcados, lineares, agudos, 1-nervados, margen entero, extendido, 12-15 x 0.7-1 mm. **Labelo** unido a la columna, entero, en aspecto general subcordiforme, obscuramente 4-lobado en la mitad basal, base profundamente cordada, subagudo, diminutamente apiculado, margen entero, extendido, 6-9 x 4-7.5 mm; bicalloso, los callos prominentes, carnosos; disco provisto de 3 quillas, la quilla central algo más prominente que el par lateral. **Columna** recta, delgada, 10-11 mm de largo. **Clinandrio** sobrepasando levemente el cuerpo de la columna, margen ligeramente eroso. **Antera** no vista. **Polinios** 4. **Rostelo** apical, hendido. **Lóbulos laterales del estigma y Nectario** no vistos. **Cápsula** angostamente elipsoide, con el perianto persistente; pedicelo terete, delgado, 13 mm de largo; cuerpo 23 x 9 mm; cuello apical muy corto, 4 mm de largo.

Epiphytic, sympodial, caespitose, erect **herb. Roots** produced along the basal internodes of the stem, fleshy, thin. **Stems** simple, cane-like, terete at the base, laterally compressed above, erect, straight. **Leaves** 7-9, distributed throughout the stem, articulate, alternate, suberect; sheath tubular, striated; blade narrowly elliptic to lanceolate, acuminate, margin entire. **Spathaceous bract** 1, at the apex of the peduncle, ovate-lanceolate, acute, tubular at the base, conduplicate at the apex, about three times longer than the floral bracts. **Inflorescence** mostly apical, occasionally lateral, racemose, flowering several times from the same peduncle and then pluriracemose, many-flowered, dense; the apical inflorescence erect, the peduncle elongate, the lateral inflorescences sessile; peduncle erect, straight, ancipitose, two-winged, the wings gradually narrower towards the apex, the peduncle about half to ¾ the length of the apical leaf; rachis generally totally hidden by the floral bracts. **Floral bracts** shorter than the ovary, ovate-elliptic, rounded, minutely apiculate, conduplicate, imbricating to subimbricating, glumaceous, occasionally leaving the rachis partially exposed when dry, light green somewhat tinged with purple near the apex, persistent after flowering. **Ovary** terete, thin, smooth. **Flowers** 6-30, successive, one open per raceme at a time, resupinate, green or greenish white, turning reddish with time. **Sepals** spreading, free, oblanceolate, acute, minutely apiculate, fleshy, margin entire, spreading; the dorsal sepal 3-veined, the laterals oblique, 5-veined. **Petals** partly spreading, free, somewhat falcate, linear, acute, 1-veined, margin entire, spreading. **Lip** united to the column, entire, subcordiform in general outline, the basal half obscurely 4-lobed, base deeply cordate, apex subacute, minutely apiculate, margin entire, spreading; bicallose, the calli prominent, fleshy; disc provided with 3 keels, the mid-keel somewhat more prominent than the lateral pair. **Column** straight, thin. **Clinandrium-hood** surpassing the body of the column, margin slightly erose. **Pollinia** 4. **Rostellum** apical, slit. **Capsule** narrowly ellipsoid, perianth persistent, pedicel terete, thin, about half as long as the body, apical neck short.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica, mainly on the Cordillera Central and the Cordillera de Talamanca, epiphytic, at [ca. 1000 m] 1350 to 2400 m altitude. Flowering throughout the year.

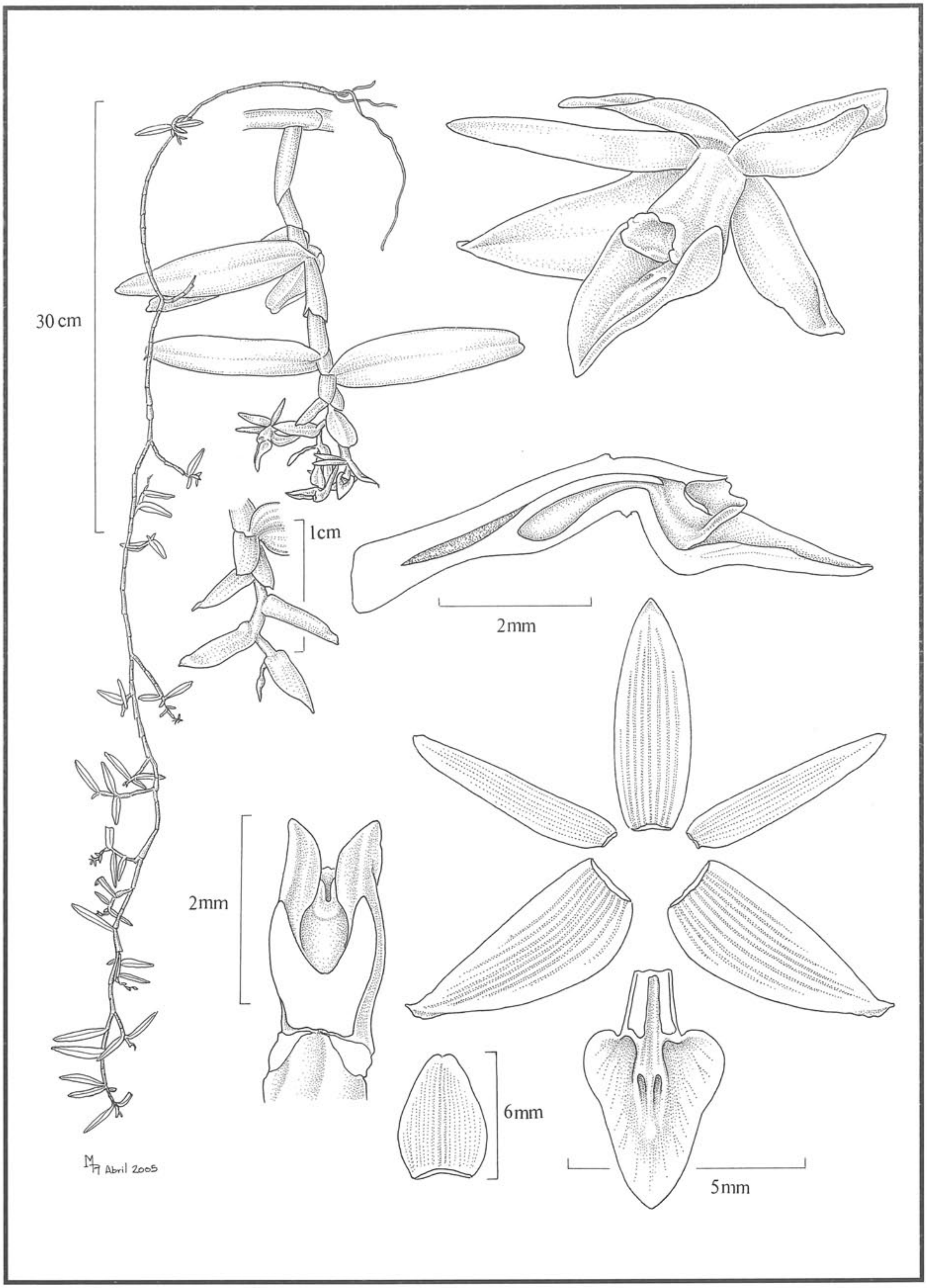
RECOGNITION: *Epidendrum lankesteri* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the apical inflorescence (rarely lateral), peduncle elongate, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricating, bracts. The species is recognized by the large plants (50-80 cm tall) with narrowly elliptic to lanceolate leaves, 5.5-27 x 1.5-3 cm; green to greenish white flowers, the sepals oblanceolate, 13-16 mm long, and the lip subcordiform, the basal half obscurely 4-lobed, 6-9 x 4-7.5 mm. *Epidendrum allenii* L.O.Williams has shorter plants (20-38 cm tall) with shorter, elliptic to lanceolate leaves (4-13.5 x 1.2-2.6 cm), the flowers greenish to pale pink with a white lip, sepals elliptic to lanceolate, 10-13.5 mm long, and the lip subreniform with the apex bilobed, 10-12 x 12-15 mm. *Epidendrum adnatum* Ames & C.Schweinf. has narrower, linear-lanceolate to linear-elliptic leaves 0.6-1.8 cm wide, and the flowers somewhat smaller, sepals 9-12 mm long, the lip ovate, subacute, 4-5.4 x 3.5-4.2 mm. *Epidendrum maduroi* Hágsater & García-Cruz has vegetatively similar but shorter plants, 40-45 cm tall, bronze to greenish flowers with an apple-green lip, oblong-oblanceolate, sepals 11-15 mm long, and the lip widely cordiform, 5-6.6 x 6-8 mm.



CONSERVATION STATUS: DD. Data deficient. Apparently frequent along its range of distribution, and found in protected areas.

ETYMOLOGY: In honor of Charles Herbert Lankester (1879-1969) who put together an orchid garden that was the Mecca for any visiting botanist and eventually became the Jardín Botánico Lankester. He sent numerous specimens to Kew and Harvard.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM LUCKEI Bock — **Plate 953**

EPIDENDRUM LUCKEI Bock. Die Orchidee 35 (3): 100. t. 15. 1984.

Type: COLOMBIA: Chocó: Río Atrato, ca. 50 m, August 1979, ***Karl-Heinz und Irene Bock 14.*** Holotype: Herb. Bock

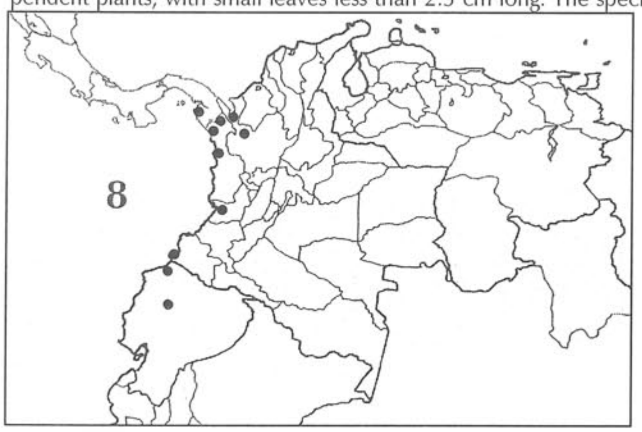
Hierba epífita, colgante, monopodial, ramificada, de 20-60 cm de largo. **Raíces** de la región basal del tallo principal, sencillas, delgadas, 0.3-1 mm de grosor. **Tallos** ramificados, tipo caña, teretes, el principal de 18-50 x 0.13-0.17 cm; las ramas de 5-15 x 0.9 x 1.5 mm, las cuales se producen de los entrenudos del tallo principal, abriéndose a un ángulo recto con respecto del tallo principal, y continúan creciendo rectos por la sucesión de tallos cortos que se forman del ápice del segmento anterior, rara vez ramificándose; cada segmento de tallo secundario de 1-3 cm de largo. **Hojas** del tallo principal no vistas, de los tallos secudarios 1-4 distribuidas a todo lo largo de cada segmento, articuladas; 1-2 vainas no foliáceas en la base, las demás tubulares, ligeramente lateralmente aplanadas, rugosas, 4-11 x 1.3-2 mm; lámina ligulada, angostamente elíptica, coriácea, superficie rugosa en seco, ápice bilobado; hojas desiguales en tamaño, 1.3-5 x 0.3-1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical de cada rama, sésil, 6-10 mm de largo; con 2 brácteas imbricadas, iguales a las florales, 4-5 mm de largo. **Brácteas florales** tan largas o ligeramente más que los ovarios y cubriéndolos, triangulares, obtusas, conduplicadas, 5-8 x 7-9 mm. **Flores** 3-5, verde pálido, algo pardas, ápice de la columna y antera raramente violaceo, sin datos de fragancia. **Ovario** corto, grueso, terete, liso, 5-6 mm de largo. **Sépalos** entreabertos, libres, angostamente elípticos, ápice obtuso, sin quillas, 7-9 nervados, margen entero, ligeramente revolutos, 5-6.2 x 1.2-1.7 mm; los laterales oblícuos, apicalmente carinados. **Pétalos** entreabiertos, libres, oblongos, obtusos, 5-nervados, margen entero, extendido, 4.7-5.4 x 0.6-0.75 mm. **Labelo** unido a la columna, entero, triangular, agudo, con la base truncada, 3.5 x 1.9-2.2 mm; unicalloso, tridentado, el diente medio ligeramente mas largo que los laterales. **Columna** arqueada hacia arriba en la mitad apical, con un par de dientes laterales, apicales, 2-2.5 mm de largo. **Clinandrio** corto, entero. **Antera** ovoide, con un par de cuernos, elongados, 4-locular. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando casi la mitad de la longitud del ovario. **Cápsula** globosa, pedicelo y cuello apical muy cortos, cuerpo 9-10 x 6-7.5 mm.

Epiphytic, pendent, monopodial, branching **herb. Roots** from the basal region of the main stem, simple, thin. **Stems** branching, cane-like, terete, the main stem long, the branches much shorter, spreading from the main stem, and continue to produce new flowering stems from near the apex of the previous stem, rarely branching. **Leaves** of the main stem not seen, 1-4 distributed along the secondary stem, articulate, with 1-2 non-foliaceous sheaths towards the base, sheaths tubular, slightly compressed, rugose; blade ligulate, narrowly elliptic, coriaceous, surface rugose when dry, apex bilobed; blades unequal in size. **Inflorescence** at the apex of the branches, sessile; with 2 imbricating bracts at the base, similar to the floral bracts. **Floral bracts** as long or longer than the ovary, triangular, obtuse, conduplicate. **Flowers** 3-5, pale green, somewhat brownish, apex of the column and the anther purplish. **Ovary** short, thick, terete, smooth. **Sepals** partly spreading, free, narrowly elliptic, apex obtuse, 7-9-veined, margin entire, somewhat revolute; the lateral sepals oblique, apically carinate. **Petals** partly spreading, free, oblong, obtuse, 5-veined, margin entire, spreading. **Lip** united to the column, entire, triangular, acute, the base truncate; callus single, tridentate, the middle tooth longer than the laterals. **Column** arching upwards at the apical half, with a pair of apical, lateral, teeth. **Clinandrium-hood** short, entire. **Anther** ovoid, with a pair of laminar, elongate horns at the apex; 4-celled. **Rostellum** apical, slit. **Nectary** penetrating nearly half the length of the ovary. **Capsule** globose, pedicel and apical neck very short.

OTHER SPECIMENS: PANAMA: Darien: Along Rio San Antonia, 2 hours walk upstream from Garachine, 500 m, 10 V 1979, *Hammel 7322*, MO! (Illustration voucher.) **COLOMBIA: Antioquia:** San Luis Parque ecológico, Caín del Río Claro, sector sur occidental, margen izquierda, 325-450 m, 12 VII 1983, *Cogollo 578*, COL! Rio Grande, about 20 km southeast of Turbo, ca. 150 m, 9 IV 1945, *Haught 4550*, AMES! COL! US! Chigorodó, río Porroso, 120 m, 12 VII 1983, *Santa 823*, COL! Mutatá 3.5 Km N of Mutatá on road to Chigorodó, 140 m, 26 III 1987, *Zarucchi 5029*, AAU! AMES! COL! **Chocó:** Turbo Carretera Tapón del Darién, sector Río León-Lomas Aisladas, km 37, 10-20 m, 27 X 1983, *Brand 575*, COL! JAUM! Ibid. detrás de loma mediana, 20 m, 27 IV 1984, *Brand 1156*, COL! JAUM! Río Truando, gallery between the boom (bun) and río Salado, 18 V 1967, *Duke 11114(3)*, US! Hydro Camp No. 14, R. Salaqui, 6 days upstream from Río Sucio, ca. 200 m, 23 V 1967, *Duke 11355(2)*, NY! Near helipand, Rio Truandó at Junction with Q. Buche, ca. 40 m, 1 IV 1968, *Duke 15744*, MO! NY! Ibid. *Duke 15744(5)*, MO! Parque Nacional Natural Los Katíos sector Sautará, en ramas de Totumo, 16 IV 1982, *Zuluaga 316*, COL! **Valle del Cauca:** Buenaventura, Timbiquí, 1 I 1899, *[F.C. Lehmann] B[entham] T[rustees] 261*, AMES! K! L! NY! **Nariño:** Tumaco, alrededores de Piñal Dulce, 4 X 1955, *Romero 5332*, COL! **ECUADOR: Esmeraldas:** La Tola, Alrededores de Olmedo, 3 m, 24 V 1994, *Cornejo 2668*, QCNE! Estero Batia, 22 VII 1967, *Játiva 1195*, NY (illustration.) UC! US! **Pichincha:** Near Santo Domingo, 550 m, 18 VI 1979, *Dodson 7758*, SEL! **Manabí:** 33.1 km W of El Carmen, 300 m, 6 VII 1971, *MacBryde 558*, AMES!

DISTRIBUTION AND ECOLOGY: Ranging along the Chocó from sea-level to 550 m, from the Darién in Panamá and the Río Atrato basin along the coastal plains and mangroves of Colombia to the lowlands of W Ecuador. Flowering from April to July.

RECOGNITION: *Epidendrum luckei* Bock belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Repens Subgroup, which has strictly pendent plants, with small leaves less than 2.5 cm long. The species has long, pendent plants with an evident main stem up to 60 cm long, and flowering from short secondary branches, the inflorescence has 3-5 simultaneous, pale-green, somwhat brownish flowers, the apex of the column and the anther purple, lip triangular, callus tridentate, with the mid-tooth somewhat longer, and the ovoid anther ending in a pair of elongate, laminar, horns. At first sight it will be vegetatively confused with *Epidendrum repens* Cogn. which has one-flowered inflorescences, and the anther lacks the apical horns. Florally it is similar to *Epidendrum cornanthera* F.Lehm. & Kraenzl. which however has short plants, up to 13 cm long, with a new stem produced from near the apex of the previous stem, there being no obvious main stem, the leaves are ovate-elliptic, proportionately wider and shorter; the anther also ends in a pair of laminar horns, but the callus is entire, "Y" shaped.

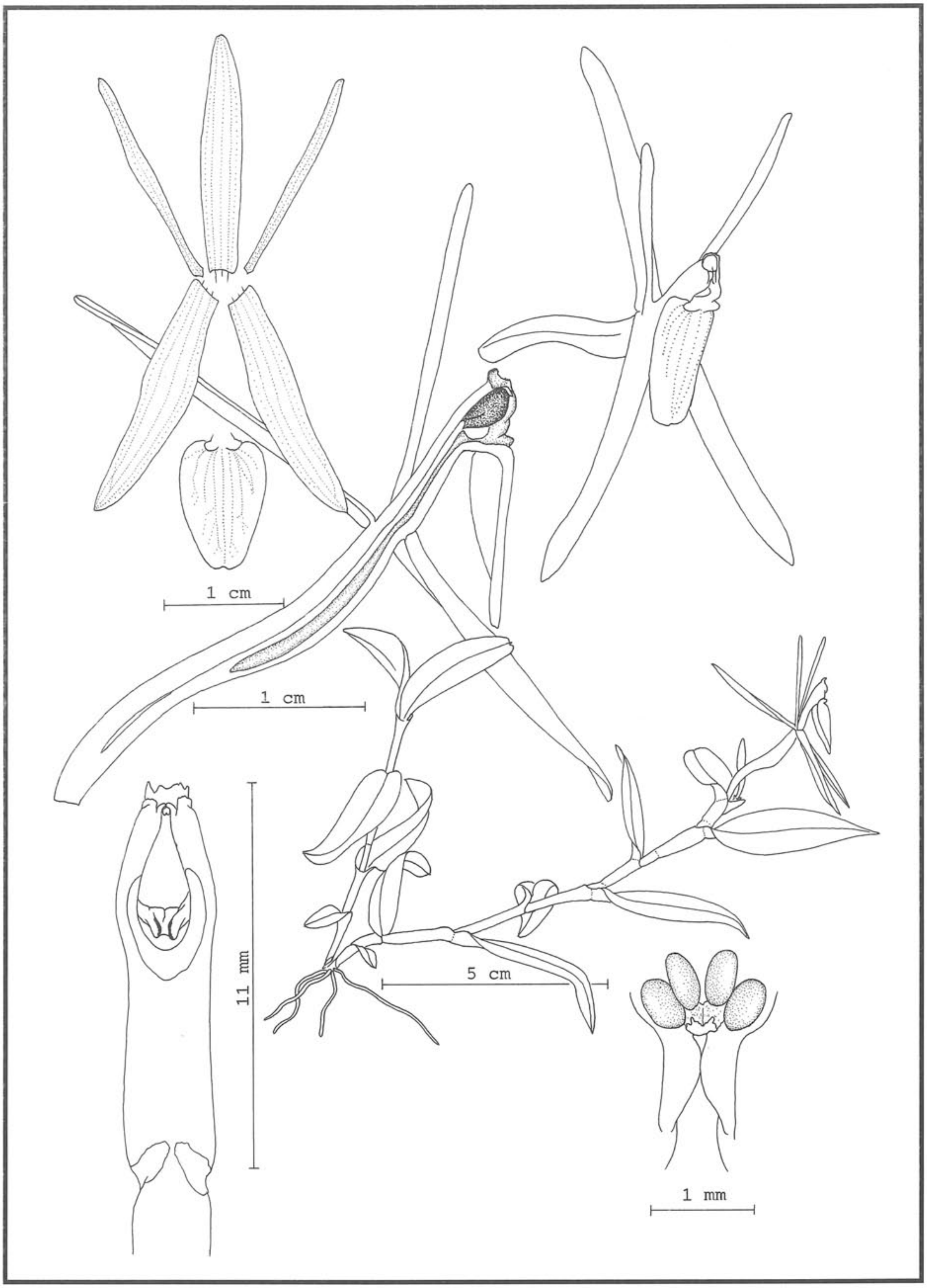


CONSERVATION STATUS: DD (Data deficient.)

ETYMOLOGY: En honor al Ehrenfried Lucke, German orchid grower, propagator and collector of wild orchids.

Authors: L. Sánchez S. & C. H. Dodson **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM MANTIS-RELIGIOSAE Hágsater **Plate 954**

EPIDENDRUM MANTIS-RELIGIOSAE Hágsater, Orquídea (Mexico City). 11: 27-28, fig. pg. 36, 1989.

Type: PANAMÁ: Panamá: Carretera a El Llano Cartí, colectado 18 marzo 1981, prensado de material cultivado 25 septiembre 1982, ***Robert L. Dressler sub Eric Hágsater 6304.*** Holotype: AMO! (Illustration voucher). Clonotypes: pressed 5 mayo 1983, PMA! pressed 6 junio 1983, K! pressed 4 septiembre 1983, MO! pressed 23 noviembre 1983, AMES!

Hierba epífita, simpodial, cespitosa, 10-15 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, filiformes, 0.4-0.6 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, flexuosos, 8-12 x 0.1-0.2 cm. **Hojas** 5-8, distribuidas a lo largo del tallo; vaina foliar, tubular, lisa, 1-2 cm de largo; lámina angostamente elíptica a lanceolada, ápice retuso, subcoriácea, lisa, verde, margen entero, 1.2-5 x 0.5-1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical en el tallo maduro, florece una sola vez, sésil. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 2.5-3 x 1-1.5 mm. **Flores** 1-2, simultáneas abriendo en sucesión, resupinadas, sépalos y pétalos verde ocre, labelo y columna verde; fragancia débil, nocturna. **Ovario** inflado ventralmente en su mitad apical, terete, no ornamentado, 23-35 x 1.2-1.7 mm. **Sépalos** extendidos, libres, angostamente ovados, ápice redondeado, coriáceos, quilla dorsal ausente, glabros, 3-nervado, con dos nervaduras laterales menores, margen extendido, entero, 15-26 x 2-4 mm, los **laterales** ligeramente falcados, ápice agudo. **Pétalos** parcialmente abiertos, linear ligulados, ápice redondeado, membranáceos, 1-nervados, con dos nervaduras secundarias menores, margen extendido, entero, 15-23 x 0.5-1.3 mm. **Labelo** unido a la columna, entero, ovado, carnoso, doblado abruptamente hacia abajo en la base y después recto hacia abajo formando un ángulo agudo con la columna, margen extendido, entero, ápice ligeramente emarginado a redondeado, 8-13 x 6-8 mm; bicalloso, los callos pequeños, subglobosos, carinas ausentes. **Columna** recta, delgada, 10-12 x 1-1.3 mm. **Clinandrio** ligeramente sobrepasando al ápice de la columna, entero, margen eroso. **Antera** ovoide, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, tan largas como los polinios; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lobulos laterales del estigma** prominentes, penetrando más de la mitad de la cavidad estigmática. **Nectario** profundo, penetrando más de 1/2 del ovario, liso. **Cápsula** no vista.

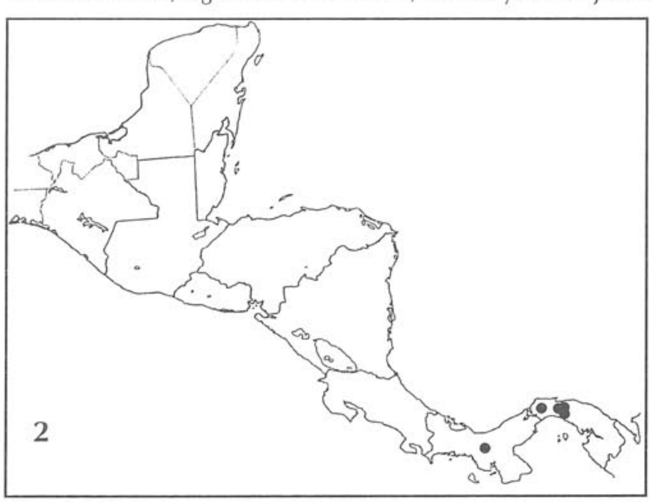
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, filiform. **Stems** simple, cane-like, somewhat laterally compressed, flexuous. **Leaves** 5-8, distributed throughout the stem; sheath tubular, smooth; blade narrowly elliptic to lanceolate, apex unequally bilobed, sobcoriaceous, smooth, green, margin entire. **Inflorescence** apical, from the mature stem, flowering only once, sessile. **Floral bract** much shorter than the ovary, triangular, acute. **Flowers** 1-2, simultaneous, opening in succession, resupinate, sepals and petals ochre-green, lip and column green; fragance weak, nocturnal. **Ovary** ventrally inflated along the apical half, terete, smooth. **Sepals** spreading, free, narrowly ovate, apex rounded, coriaceous, glabrous, 3-veined, with 2 smaller, lateral veins, margin spreading, entire; the lateral sepals slightly falcate, acute. **Petals** partly spreading, linear-ligulate, apex rounded, membranaceous, 1-veined, with a pair of shorter, secondary veins, margin spreading, entire. **Lip** united to the column, entire, ovate, fleshy, sharply bent downwards at the base, then straight, thus forming an acute angle with the column, margin spreading, entire, apex slightly emarginate to rounded; bicallose, the calli small, subglobose. **Column** straight, thin. **Clinandrium-hood** slightly surpassing the apex of the column, entire, margin erose. **Anther** ovoid, 4-celled. **Pollinia** 4, subequal, obovoid, laterally compressed; caudicles soft and granulose, as long as the pollinia; viscidium viscous, translucent. **Rostellum** subapical, slit. **Nectary** deep, penetrating more than ½ the ovary, smooth.

OTHER SPECIMENS: PANAMÁ: Panamá: Cerro Jefe, ca. 700 m, 23 II 1970, *Dressler 3831,* Herb. Dressler! El Llano Cartí road, 10-15 Km N of El Llano, 3 III 1976, *Dressler 5289,* AMO! **Coclé:** 7 Km north of El Copé, on Atlantic Slope; 500-700 m, 2 V 1977, *Folsom 2864A,* MO!

OTHER RECORDS: PANAMÁ: Panamá, "Panama" Fred Fuchs, cult. at Missouri Botanical Garden, 1961, *Dodson s.n.*, slide AMO! El Llano-Cartí, *Dressler 4526,* (fide Dressler, pers. comm., 1985).

DISTRIBUTION AND ECOLOGY: Only known from central Panama, epiphytic at 500-700 m altitude. Flowering from February to May.

RECOGNITION: *Epidendrum mantis-religiosae* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by the narrow, elliptic to lanceolate leaves, 1-2 successive, green flowers, linear-ligulate, 1-veined petals, the vertical, ovate lip bent downwards at the base, forming an acute angle with the column, and the clinandrium-hood slightly surpassing the column, entire, erose; the flower is reminiscent of a Praying Mantis, and thus easily recognized among the Difforme Group. *Epidendrum atwoodii* Hágsater & L. Sanchez, endemic from the Atlantic slope of Costa Rica has linear to lanceolate leaves, a greenish white flower, the ovary dilated just behind the perianth, petals adnate to the basal third of the column, the flabellate lip 3-lobed, and the prominent clinandrium-hood fimbriate.

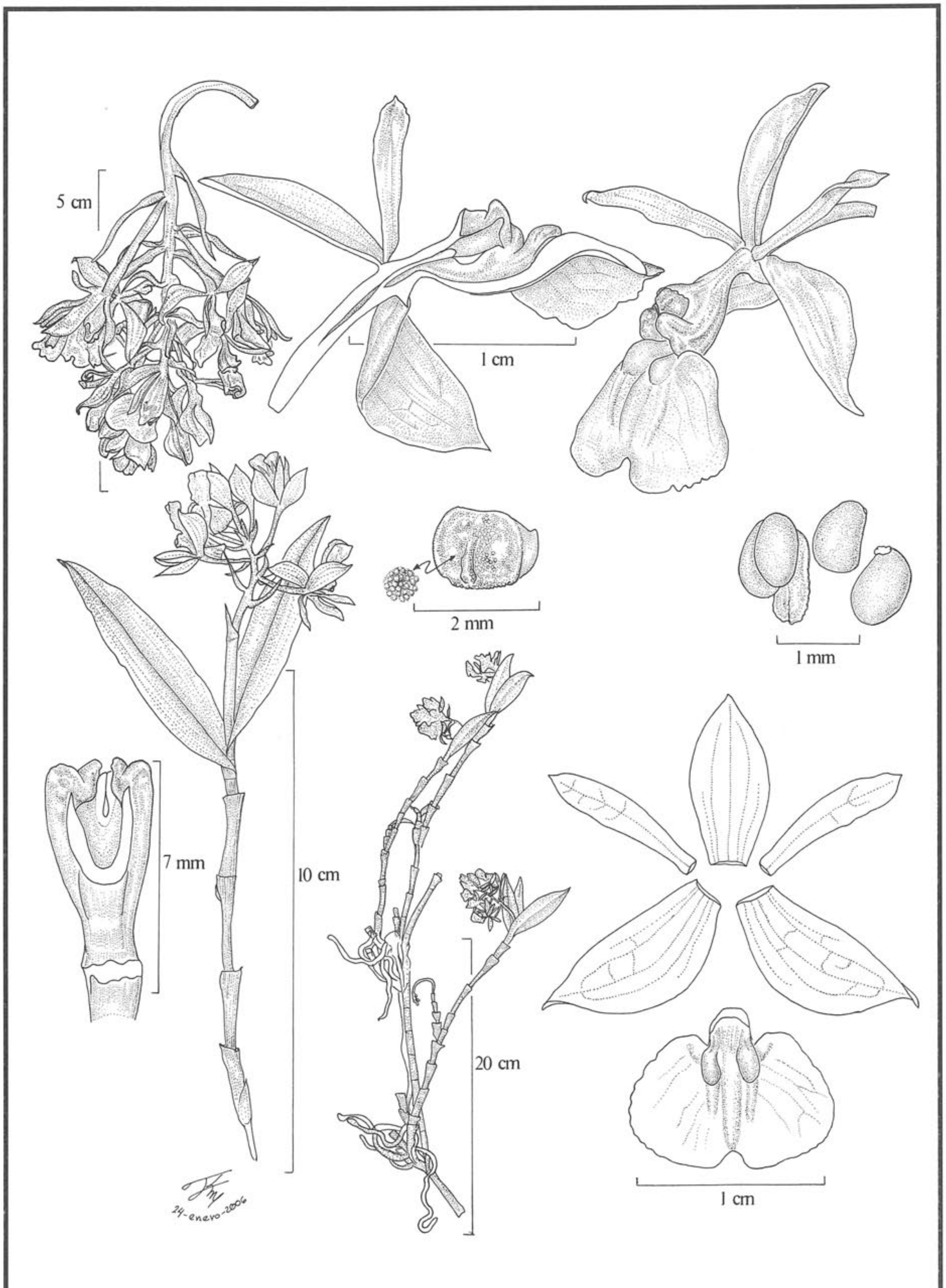


CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: From the Praying Mantis, or *Mantis religiosae* or "campamocha" as it is known in Panama, and insect of the Mantid family, in reference to the peculiar position of the lip in relation to the column, which is reminiscent of the fore-legs of the insect.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM MARCAPATENSE Hágsater & R.Fernández

Plate 955

EPIDENDRUM MARCAPATENSE Hágsater *et* R.Fernández, *sp. nov.*

Type: PERU: Cusco: Marcapata, alrededores de Marcapata, a 16 km de Marcapata en dirección a Quincemil, 2530 m; ceja de selva, ladera rocosa húmeda, epífita, ***Ricardo Fernández G. 493.*** Holotype: USM! Isotype: AMO! (Illustration voucher.)

Epidendro nephroglosso Schltr. simile sed foliis floribusque minoribus, bracteis floralibus angustioribus et subtilibus, labello plus trapezoidali cordato emarginatoque, discrepat.

Hierba epífita, simpodial, donde cada tallo nuevo se origina de un entrenudo intermedio subapical del tallo anterior, erecta, ca. 40 cm de alto. **Raíces** de la base de los tallos más viejos, carnosas, gruesas. **Tallos** sencillos, el nuevo tallo se origina de un entrenudo subapical del tallo anterior, tipo caña, teretes, delgados, rectos, 6-10 x 0.3 cm. **Hojas** 3, agrupadas hacia el ápice de cada tallo, alternas; vaina tubular, finamente estriada, 2-11 x 2-3 mm; lámina angostamente elíptica, aguda, lisa, margen entero, extendido, 4.7-5.4 x 0.9-1.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada nutante, pauciflora, laxa, 6 cm de largo; pedúnculo lateralmente comprimido, recto, no ornamentado, provisto de una bráctea hacia la raquis, angostamente triangular, conduplicada, acuminada, 7 mm de largo. **Flores** 8-12, simultáneas, resupinadas, carnosas, verdosas, teñidas de púrpura; fragancia no registrada. **Brácteas florales** casi tan largas hasta mucho más cortas que el ovario, lineares a triangulares, acuminadas, conduplicadas en la base, abrazadoras, 3-15 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 5-15 mm de largo. **Sépalos** extendidos, libres, elípticos, subagudos, 3-nervados, con un par de nervaduras secundarias hacia los márgenes, márgenes extendidos, enteros, 9-10 x 4.0-4.5 mm; los **laterales** algo falcados y aristados. **Pétalos** extendidos, libres, oblongo oblanceolados, obtusos, 1-nervados, margen extendido, entero, 8.5 x 2 mm. **Labelo** unido a la columna, bilobado, en aspecto general reniforme, cordado en la base, ápice emarginado, margen eroso, 7 x 11 mm; bicalloso, los callos muy prominentes, carnosos, subglobosos, con 3 quillas romas, lisas, bajas, la central desvaneciéndose antes de llegar al ápice del labelo, el par lateral más corto. **Columna** adelgazada cerca de la base, el clinandrio arqueado hacia arriba, gruesa, 7 mm de largo, el ápice con un diente ancho y redondeado viendo hacia arriba. **Clinandrio** reducido, margen eroso. **Antera** reniforme, diminutamente papilosa, con una quilla baja al frente, 4-locular. **Polinios** 4, obovoides, caudículas ligeramente más largas que los polinios, granulosas. **Rostelo** apical, hendido. **Nectario** penetrando hasta el perianto, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, erect **herb** where the new growth originates from an intermediate subapical internode of the previous growth. **Roots** from the base of the older stems, fleshy, thick. **Stems** simple, where the new stem is produced from a subapical node of the previous stem, cane-like, terete, thin, straight. **Leaves** 3, aggregated towards the apex of each stem, alternate; sheath tubular, minutely striated; blade narrowly elliptic, acute, smooth, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose, arching-nutant, few, lax-flowered; peduncle laterally compressed, straight, provided with a bract near the rachis, the bract narrowly triangular, conduplicate, acuminate. **Flowers** 8-12, simultaneous, resupinate, fleshy, greenish, tinged with purple. **Floral bracts** nearly as long to much shorter than the ovary, linear to triangular, acuminate, conduplicate at the base. **Ovary** terete, thin, smooth, short. **Sepals** spreading, free, elliptic, subacute, minutely apiculate, 3-veined, with a pair of secondary veins towards the margins, margin spreading, entire; the **laterals** somewhat falcate, aristate. **Petals** spreading, free, oblong-oblanceolate, obtuse, 1-veined, margin spreading, entire. **Lip** united to the column, bilobed, reniform, base cordate, apex emarginate, margin erose; bicallose, the calli prominent, fleshy, subglobose, with 3 low, rounded, smooth keels, the mid-keel nearly reaching the apical sinus, the lateral keels shorter. **Column** constricted near the base, arching upwards a the clinandrium-hood, thick, the apex with a thick, rounded tooth facing upwards. **Clinandrium-hood** reduced, erose. **Anther** reniform, minutely papillose, with a low keel in front, 4-celled. **Pollinia** 4, obovoid, caudicles slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating as far as the perianth, narrow, smooth.

OTHER SPECIMENS: PERU: Cusco: Marcapata, 3200 m, 20 VII 1987, *Núñez 8208*, MO! USM! Quispicanchi, 2800-4600 m, 21 IV 1988, *Núñez 9050*, MO! SEL! Entre Abra Walla Walla y Marcapata, 2800-4600 m, 21 IV 1988, *Núñez 9039*, MO! Marcapata, 3200 m, 4 IX 1965, *Vargas 16565*, AMES! CUZ! **Puno:** 10 km S of Ollachea, 13 VIII 1980, *Boeke 2980*, NY! Ollachea a Pte. Acknopampa, 3000 m, 31 XII 1947, *Vargas 6980*, CUZ!

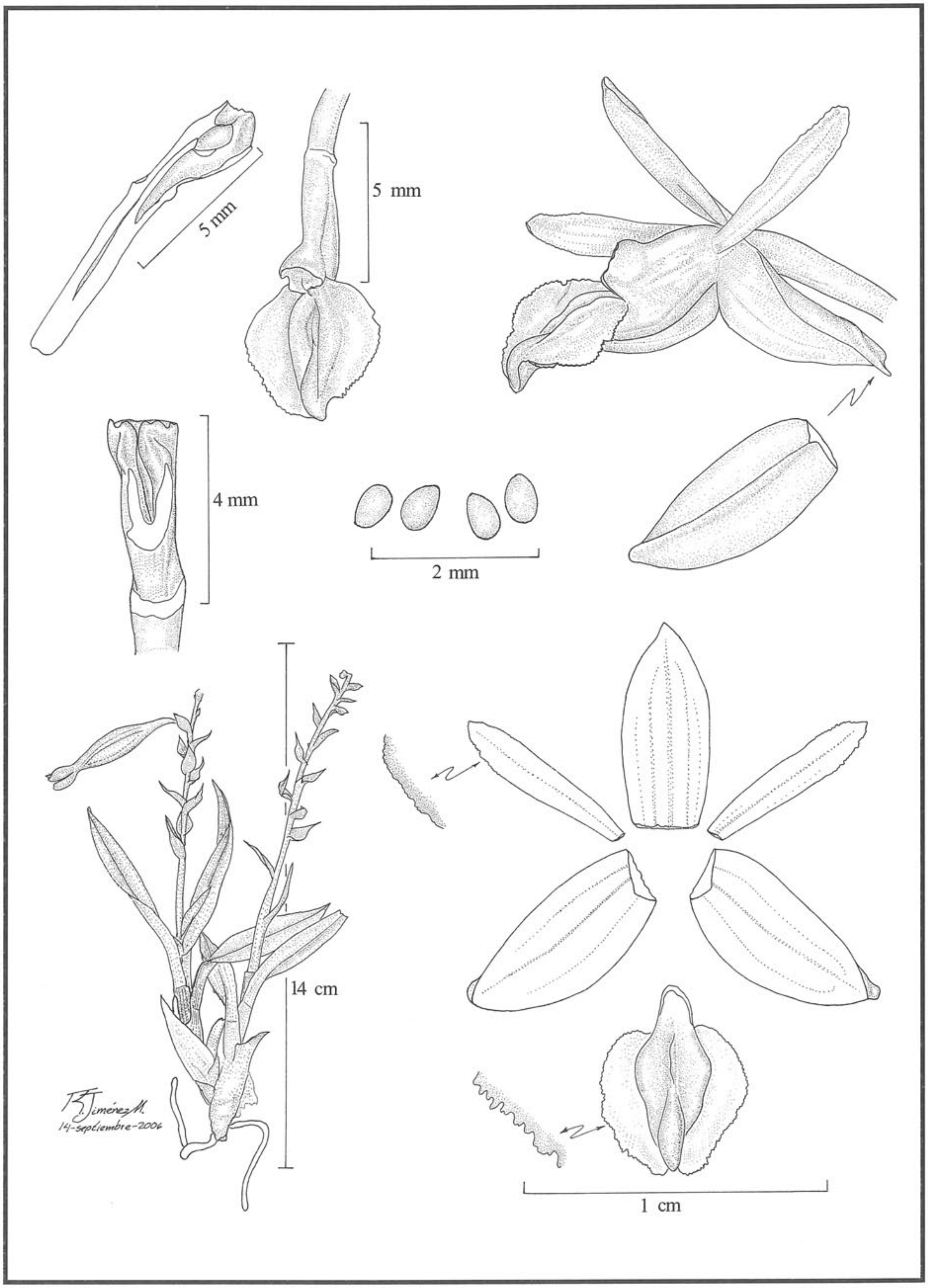
DISTRIBUTION AND ECOLOGY: Known only from the upper ridge of the Amazon slope in southern Peru, from Marcapata to Ollachea, at 2500-3200 m altitude. In ceja de selva. Flowering in September, and apparently throughout the year.



RECOGNITION: *Epidendrum marcapatense* belongs to the Arbuscula Group, Incomptum Subgroup, characterized by the sympodial habit, the new growth produced from the mid-nodes of the previous cane-like growth below the leaves, the apical inflorescence flowering one time only, and the roots produced at the base of each new growth, not at the intermediate nodes, the flowers fleshy. The species is recognized by the 9-10 mm long sepals, the lip is bilobed, reniform, base cordate, apex emarginate, margin erose. *Epidendrum nephroglossum* Schltr. has comparatively wide, acuminate floral bracts, a 13 mm wide lip, the sepals being 11 mm long, and the petals linear-oblanceolate and somewhat acuminate, it was described from the Chanchamayo valley in Junín province, Peru. It is similar to *E. latisegmentum* C. Schweinf. which has larger flowers, (sepals 18-21 mm long), a thin, uninflated nectary, a large, bilobed, reniform lip, and the relatively wide sepals and petals. *Epidendrum marsiorum* R. Vásquez & Ibisch, has an entire lip about 8 mm wide, sepals 9-10 mm long, and leaves 5-12 x 1-2 cm, and is found in eastern Peru and neighboring Bolivia. It is somewhat similar to *Epidendrum fujimorianum* D. E. Benn. & Christenson which has a 4 lobed lip, the apical lobes small and semicircular.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the locality where the type was collected, Marcapata in the Department of Cusco, Province of Quispicanchis, in southern Peru.



EPIDENDRUM MEGALOCOLEUM Hágsater **Plate 956**

EPIDENDRUM MEGALOCOLEUM Hágsater, *sp. nov.*

Type: PERU: Amazonas: Chachapoyas, arriba de Lluy, Leimebamba, 3000 m, 16 junio 1982, ***Ricardo Fernández González 57.*** Holotype: USM! Isotype: AMO! (Illustration voucher.)

Epidendro rupestri Lindl. simile sed in omnino minus, inflorescentia dense multiflora, petalis latioribus et labello integro, differt.

Hierba epífita, simpodial, ligeramente escandente, erecta, 8.5-13 cm de alto. **Raíces** basales, carnosas, gruesas, blancas, 1-2 mm de grosor. **Tallos** sencillos, formando seudobulbos fusiformes, homoblásticos, cortos, 1.6-2.6 x 0.45-0.6 cm; basalmente cubiertos de manera parcial por 1 a 2 vainas anchamente ovadas, agudas, margen ocasionalmente crenado, fibrosas con el tiempo, 1.5 cm de largo. **Hojas** 2-5, una apical en el tallo, las demás de una vaina foliácea, alternas, articuladas, suberectas, desiguales en tamaño (las 2 apicales muy pequeñas); vainas subtubulares, finamente estriadas, 6-12 mm de largo; lámina angostamente elíptica, aguda, con una quilla dorsal diminuta, subcoriácea, margen crenado, 1.2-5 x [0.2]0.5-0.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, multiflora, densa, 6-8 cm de largo; pedúnculo corto, delgado, lateralmente aplanado, no ornamentado, ca. 1.3-2 cm de largo. **Brácteas florales** de la mitad del largo del ovario, triangular ovadas, agudas, abrazadoras, gradualmente más cortas, 3-8 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 9-11 mm de largo. **Flores** 10-13, sucesivas, aunque unas 5 o 6 abiertas de manera simultánea, resupinadas, de color pardo amarillento claro; sin datos de fragancia. **Sépalos** libres, obtusos, 3-nervados, algo dorsalmente carinados, lisos, margen entero, 6.6-7.1 x 2.8-3.1 mm; el **dorsal** entreabierto, angostamente ovado oblongo; los **laterales** extendidos, elíptico oblongos, oblicuos. **Pétalos** extendidos, libres, linear oblanceolados, obtusos, 1-nervados, margen eroso en la mitad apical y entero en la mitad basal, 6.3 x 1.25 mm. **Labelo** unido a la columna, entero, ovado orbicular, base subcordada, ápice emarginado, mucronado en el seno, 4.7 x 4.7 mm; ecalloso, disco con tres quillas muy grandes, carnosas, romas, anchas, las laterales terminan en las ¾ partes basales del labelo, la media comienza a la mitad de la lámina y termina en un mucro del seno apical. **Columna** ligeramente arqueada hacia la base, gruesa, 4 mm de largo. **Clinandrio** prominente, aunque sin sobrepasar el cuerpo de la columna, en forma de embudo, entero, margen eroso. **Antera** no vista. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cortos de 1/3 del largo de la cavidad estigmática. **Nectario** corto, penetrando el ovario justo detrás del perianto, no inflado, no ornamentado. **Cápsula** angostamente elipsoide, con el perianto persistente; cuerpo 22 x 6 mm; pedicelo 4 mm de largo; cuello apical ausente.

Epiphytic, sympodial, slightly scandent, erect **herb. Roots** basal, thick, white. **Stems** simple, forming short, fusiform pseudobulbs, partly covered by 1-2 acute sheaths, becoming fibrous with time. **Leaves** 2-5, one apical on the stem, the others from a foliaceous sheath, the blades articulate, suberect, narrowly elliptic, acute, with a low dorsal keel, subcoriaceous, margin entire, unequal, that of the sheath usually smaller. **Inflorescence** apical, racemose, erect, many-flowered, dense; peduncle short, thin, laterally flattened. **Floral bracts** half the length of the ovary, triangular ovate, acute. **Ovary** terete, thin, smooth. **Flowers** 10-13, most of them open simultaneously, a few apical buds still closed, resupinate, pale yellowish brown. **Sepals** free, obtuse, 3-veined, smooth, margin entire; the dorsal sepal reflexed, narrowly oblong-ovate; the lateral sepals partly spreading, elliptic-oblong, somewhat dorsally keeled, oblique. **Petals** spreading, free, linear-oblanceolate, obtuse, 1-veined, the apical margin erose, the basal half entire. **Lip** united to the column, entire, ovate orbicular, base subcordate, ecallose, disc with 3 well-defined, central keels, the lateral pair ending at about ¾ the length of the lip, the central keel staring at the middle of the lip and ending in the fleshy mucro. **Column** slightly arching near the base, thick. **Clinandrium-hood** prominent, funnel-like, margin erose. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** short, barely penetrating the ovary, thin, smooth. **Capsule** narrowly ellipsoid.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Cusco: Incatambo: Historical Sanctuary of Machu Picchu, 3635 m, 4 IX 2001, *Nauray 31*, note, xerox of illustration and photograph, (provided by E. Christenson) AMO! Specimen cited (*MP-31*) at CUZ. Apparently same collection, digital images, received 14 IX 2001 by *Uchima*, AMO!

DISTRIBUTION AND ECOLOGY: Known only from northeastern Peru, above the Río Marañón, on the Calla Calla mountains, and above Río Urubamba, Machu Picchu, epiphytic, at 3000-3635 m altitude. Flowering June.



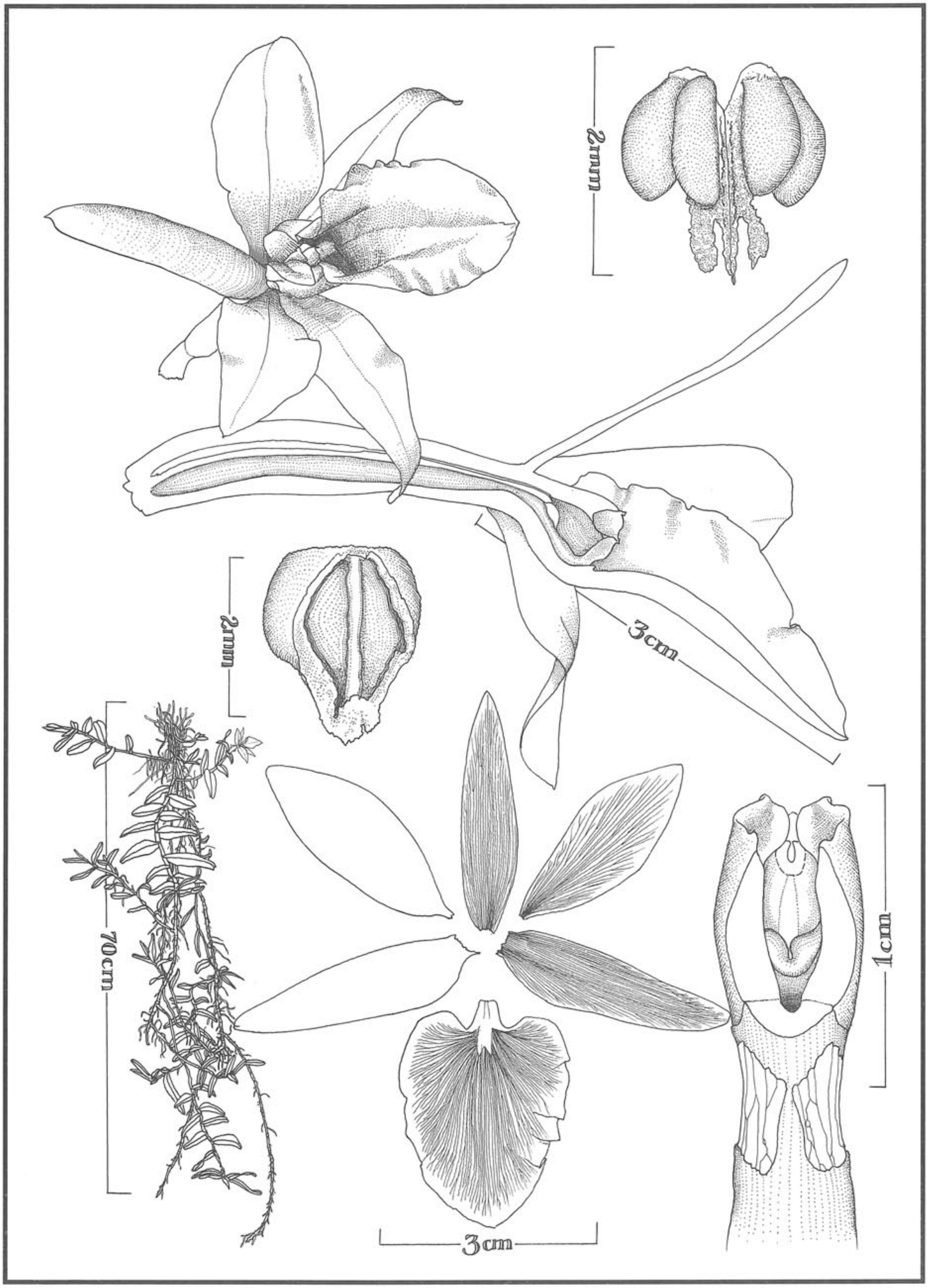
RECOGNITION: *Epidendrum megalocoleum* belongs to the Rupestre Group which is characterized by the caespitose, sympodial plant, the pseudobulbous stems with 1-4 fully developed leaves toward the apex, and lack of spathes at the base of an erect, racemose or paniculate inflorescence, the lip ecallose but with several fleshy thickened keels on the disc. The species is recognized by the 10-13 flowered raceme of small flowers (sepals 6.6-7.1 mm long), the entire lip, deeply emarginate and mucronate, ecallose, the disc with 3 well-defined, central keels, the lateral pair ending at about ¾ the length of the lip, the central keel starting at the middle of the lip and ending in the fleshy mucro. *Epidendrum excelsum* C.Schweinf. has an entire lip, with the margin deeply dentate, two calli at the base, and the disc somewhat thickened, but otherwise the habit is simlar as well as the flowers (both were collected together in Machu Picchu, fide C. Uchima). *Epidendrum pachydiscum* Hágsater has elliptic leaves 7-12 mm wide, the erect, many-flowered raceme of small flowers (sepals 5.3-5.8 mm long), and the deeply 3-lobed lip, ecallose with a fleshy, 3-keeled disc, and the midlobe bilobed, the outer sides curved outwards and entire, the inner sides dentate to short fimbriate, the lobes about as long as they are wide. *Epidendrum rupestre* Lindl. has a loosely racemose inflorescence, larger flowers (sepals 7 mm long), and the midlobe of the lip subquadrate-rounded, broader than long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek μεγαλο, large, and κολεος, vagina, in reference to the shape of the enlarged, thickened keels of the disc of the lip, which are reminiscent of the female genitals.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM MIRABILE Ames & C.Schweinf. **Plate 957**

EPIDENDRUM MIRABILE Ames & C.Schweinf., Schedul. Orchid. 10. 67. 1930.

Type: COSTA RICA: San Ignacio de Aserrí, 1150 m, 12 September 1925, flowers rose-purple, lip white, ***Anastasio Alfaro 180***. Holotype: AMES 31332! Isotypes: US 1208293! US 1208294!

Hierba epífita, colgante a rastrera, hasta 120 cm de largo. **Raíces** basales, delgadas, carnosas, 0.7-2 mm de grosor. **Tallos** colgantes, ramificados, tipo caña, teretes, largos, delgados, rectos, sucesivos, sin un tallo principal propiamente dicho; cada tallo produce un tallo nuevo de un entrenudo intermedio del tallo anterior, 30-60 x 0.2-0.3 cm. **Hojas** numerosas, alternas, distribuidas a lo largo de cada tallo; vaina tubular, lisa, 1.5-2 cm de largo; lámina articulada, angostamente lanceolado elíptica, desigualmente bilobada, subcoriácea, lisa, margen entero, las hojas inferiores y la apical menores, 4-10 x 1-2.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, de 6-7 cm de largo, con 1 a raramente 2 brácteas del pedúnculo, imbricadas, conduplicadas, ovadas, redondeadas, 15 mm de largo. **Flores** 1-3, generalmente 2, simultáneas, dísticas, el labelo siempre orientado hacia la raquis, muy vistosas, rosado moradas, el disco del labelo y el ápice de la columna blancos; fragancia fuerte, dulce. **Brácteas florales** del mismo tamaño a ligeramente más largas que el ovario, ovadas, conduplicadas, no imbricadas, 25-45 x 15-20 mm. **Ovario** ligeramente inflado hacia la base, terete, liso, 25-35 x 3-4 mm. **Sépalos** extendidos, libres, lanceolados, agudos, sin quilla dorsal, glabros, membranáceos, plurinervados, margen entero, algo revoluto, 27-36 x 5-7 mm; los laterales oblicuos. **Pétalos** entreabiertos, angostamente ovado elípticos, agudos a obtusos, membranáceos, plurinervados, margen extendido, entero, 25-33 x 10-12.5 mm. **Labelo** unido a la columna, entero, ovado elíptico, obtuso, los lados abrazando a la columna sin cubrirla, membranáceo, margen entero, ondulado, 24-30 x 17-22 mm; callo en forma de "Y" prolongándose en una quilla larga hasta el ápice. **Columna** recta, gruesa, 6.5-8.5 mm de largo. **Clinandrio** reducido, eroso. **Antera** subesférica, con una punta roma al frente, 4-locular. **Polinios** 4, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios. **Lóbulos laterales del estigma** prominentes, ocupando 1/2 de la cavidad estigmática. **Nectario** profundo, penetrando toda la longitud del ovario. **Cápsula** no vista.

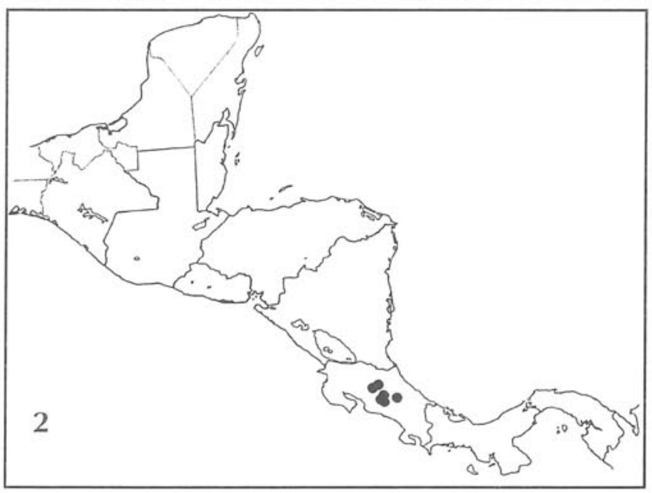
Epiphytic, branching, pendent to creeping **herb**. **Roots** basal, fleshy, thin. **Stems** cane-like, terete, long, thin, straight, successive, the new stem produced from a subapical internode of the previous stem. **Leaves** numerous, alternate, distributed throughout the stems; sheath tubular, smooth; blade articulate, narrowly lanceolate-elliptic, unequally bilobed, subcoriaceous, smooth, margin entire, the lower and apical leaves smaller. **Inflorescence** apical, flowering only once. **Flowers** 1-3, generally 2, simultaneous, distichous, the lip always towards the rachis, very showy, rosy purple, the disc of the lip and the apex of the column white; fragrance strong, sweet. **Floral bracts** equal to or longer than the ovary, ovate, conduplicate, non-imbricating. **Ovary** slightly inflated towards the base, terete, smooth. **Sepals** spreading, free, lanceolate, acute, without any dorsal keel, glabrous, membranaceous, many-veined, margin entire, somewhat revolute; the laterals oblique. **Petals** partly spreading, narrowly ovate-elliptic, acute to obtuse, membranaceous, many-veined, margin spreading, entire. **Lip** united to the column, entire, ovate-elliptic, obtuse, the sides embracing the column without covering it, membranaceous, margin entire, undulate; callus "Y" shaped, prolonged into a long keel that runs down to the apex. **Column** straight, thick. **Clinandrium-hood** reduced, erose. **Anther** subspherical, with a rounded point in front, 4-celled. **Nectary** deep, penetrating the whole length of the ovary.

OTHER SPECIMENS: COSTA RICA: Without locality, 1 X 1964, *Kreb s.n.*, M! Ibid. 6 IX 1971, *Rodriguez 1313*, USJ! Matamba (entre Pirris [Birrís] y San Gerónimo), 6000 ft, 18 X 1935, *Brade 323*, AMES! CR! Cedrales de Aserrí (Alto de Las Palomas), 16 X 1935, *Brenes 318*, AMES! San Gabriel de Aserrí, 14 IX 1946, *Echeverria 647*, F! Alto de Tarbaca, 24 IX 1968 *Gómez 2056*, USJ! Tablazo, 5000-6000 ft, *Lankester 1220*, AMES! Vara Blanca de Sarapiquí, 1800 m, 1 X 1937, *Skutch 3370*, AMES! K x2! MO! NY! S! SEL! US! San Ignacio, cultivada en Paque Bolivar, 23 IX 1923, *Valerio 976*, F! **Alajuela:** Above Rio Toro, 1550 m, 3 IX 1972, *Lent 2816*, F! Alfaro Ruiz Palmira, 6000 ft [1836 m], 18 IX 1937, *Smith 399*, AMES! F! **San José:** Cerro Escazú, 25 X 1978, *Todzia 504*, CR!

OTHER RECORDS: COSTA RICA: San José: Cerro Daser, 2000 m, 14 X 1987, *Hágsater 6705*; slides, flower card, and flowers in spirit, AMO! (Illustration voucher.) "Costa Rica", 30 III 1974, *McCullough 387*; slide, flower card, AMO! Without locality, 11 VIII 1963, *Rafael Lucas Rodriguez 151*, watercolor illustration; xerox, slide: AMO!

DISTRIBUTION AND ECOLOGY: Endemic to central Costa Rica, especially the mountains directly south of San José, but historically the Atlantic slope's upper ridge of the Cordillera Central. Epiphyte, on the moss covered trunks and branches of oaks, from 1100 to 2000 m. Flowering in September and October.

RECOGNITION: *Epidendrum mirabile* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Mirabile Subgroup which has pendent plants, successive stems produced from a middle internode of the previous stem, without any evident main stem; the flowers white to purple and mostly very fragrant. The species is recognized by the largest flowers in the group, sepals 27-36 mm long, the flowers are very showy, purple-pink, with the disc and column white, the lip ovate-elliptic. *Epidendrum rafael-lucasi* Hágsater has 2-4 successive, green yellowish flowers, the sepals minutely dotted with brown on the outside, sepals 16-20 mm long, lip triangular-cordiform. *Epidendrum haberi* Hágsater has a 2-flowered raceme, white flowers, verrucose ovary, elliptic sepals, many-veined, oblique petals, a cordiform lip, and short column. *Epidendrum cocoënse* Hágsater from Cocos Island has a 3-flowered raceme with lemon-yellow flowers, long floral bracts, 7-veined sepals, narrowly elliptic-lanceolate, 5-veined petals, and an elongate lip with a "Y"-shaped callus.



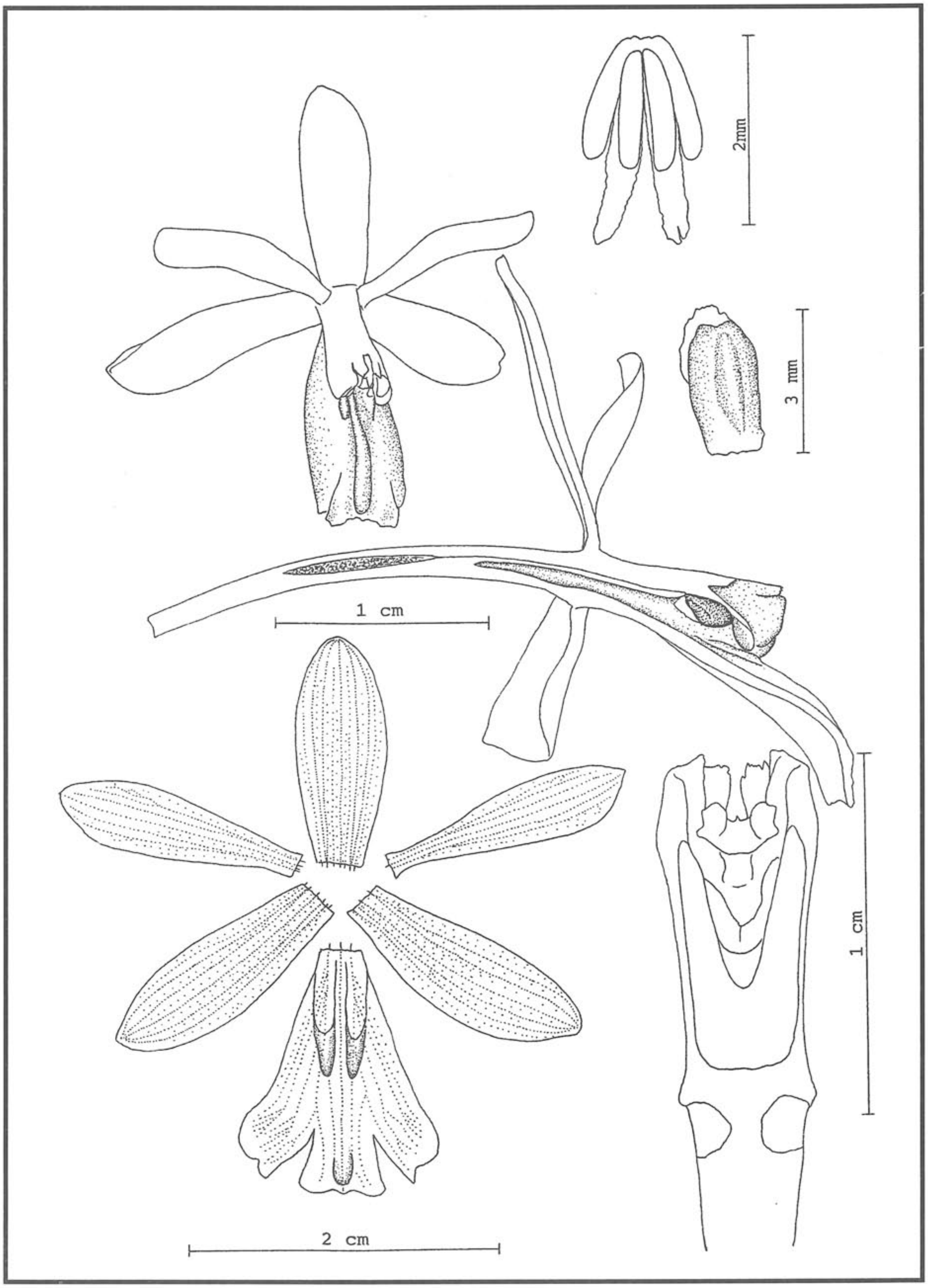
CONSERVATION STATUS: DD. Data deficient.

NOTE: Rafael Lucas Rodriguez described the floral fragrance as "strong, of '3 flower' lotion by Richard Hudhut (?)", and also as "sweet, like the topping of a cake, with vanilla".

ETYMOLOGY: From the Latin *mirabile* grand, wonderful, in reference to the showy flowers.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Peláez** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM MISASII Hágsater **Plate 958**

EPIDENDRUM MISASII Hágsater, Lankesteriana 5(1): 73. 2005.

Type: COLOMBIA: Antioquia: Municipio de Valdivia, collected 1972, pressed 21 April 1983, ***Guillermo Misas sub E. Hágsater 7234.*** Holotype: AMO! (Illustration voucher)

Basionym: *Oerstedella viridiflora* Hágsater, Orquideología 16(2): 192. 1984. Not *Epidendrum viridiflorum* (Hook) Lindl., Bot. Reg. Misc. 30. 1842. (=*Encyclia viridiflora* Hook), neither *Epidendrum viridiflorum* Sessé & Mociño, Fl. Mexic. 2nd ed.: 203. 1894.

Hierba epífita, cespitosa, simpodial; de 35-50 cm de alto. **Raíces** basales, gruesas. **Tallos** sencillos, tipo caña, teretes, erectos, rectos; 35-50 x 0.3-0.5 cm. **Hojas** ca. 23, distribuidas a lo largo de la mitad apical del tallo, alternas, articuladas, las basales generalmente caedizas; vainas tubulares, con verrugas amoratadas; 30-50 x 3-5 mm; lámina angostamente elíptica, aguda, subcoriácea, margen entero; 6-13 x 1.1-1.8 cm. **Bráctea espatácea** ausente. **Inflorescencias** apical o laterales del ¼ apical del tallo, racemosas, cortas, paucifloras, laxas; 3-7 cm de largo; pedúnculo corto, terete, delgado, 1-2 cm de largo; provisto de 1 bráctea, cuculada, aguda, amplexicaula, 5-6 mm de largo. **Brácteas florales** mucho más cortas que el ovario, cuculadas a anchamente triangulares, agudas, abrazadoras; 3-6 mm de largo. **Ovario** terete, delgado, no inflado, liso, algo dilatado justo detrás del perianto; 30-35 mm de largo. **Flores** 2-6 por racimo, simultáneas, resupinadas; sépalos y pétalos verde olivo, labelo y columna blancos con ligeros tintes lilas, callo amarillo; sin fragancia. **Sépalos** entreabiertos a ligeramente reflexos, libres, carnosos, elíptico obovados, ápice redondeado, 9-nervados, las nervaduras laterales ramificadas dando la apariencia de ser 11-nervados, margen entero; 15-17 x 6 mm. **Pétalos** entreabiertos a ligeramente reflexos, libres, oblanceolados, obtusos, 3-nervados, las nervaduras laterales muy ramificadas desde la base dando la apariencia de ser 7-nervados, margen entero; 17 x 4.5 mm. **Labelo** unido a la columna, 3-lobado, cuneado, los tres lóbulos del mismo largo aproximado (los lóbulos laterales alcanzando el ápice del lóbulo medio), margen entero; 15 x 13 mm; bicalloso, los callos cortos, delgados, romos; disco provisto de 1 quilla, central prominente, roma, alargada hasta el ápice del lóbulo medio; lóbulos laterales a un ángulo de 45° respecto del eje del labelo, subrectangulares, terminados en una punta aguda por dentro, redondeados por fuera, margen ligeramente revoluto; 5 x 15 mm; lóbulo medio algo cuneiforme, el ápice trucado con un apículo diminuto; 5 x 5 mm. **Columna** recta, delgada, terminada en cuatro lóbulos truncados; 10 mm de largo. **Clinandrio** corto, bilobado, margen eroso dentado. **Antera** oblonga subobovoide, ápice truncado, con una quilla baja al centro, 4-locular. **Polinios** 4, oblongo obovoides, lateralmente aplanados; caudículas más largas que los polinios; sin viscidio. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Lóbulos laterales del estigma** prominentes, triangulares. **Nectario** penetrando ¼ del ovario, angosto, liso. **Cápsula** no vista.

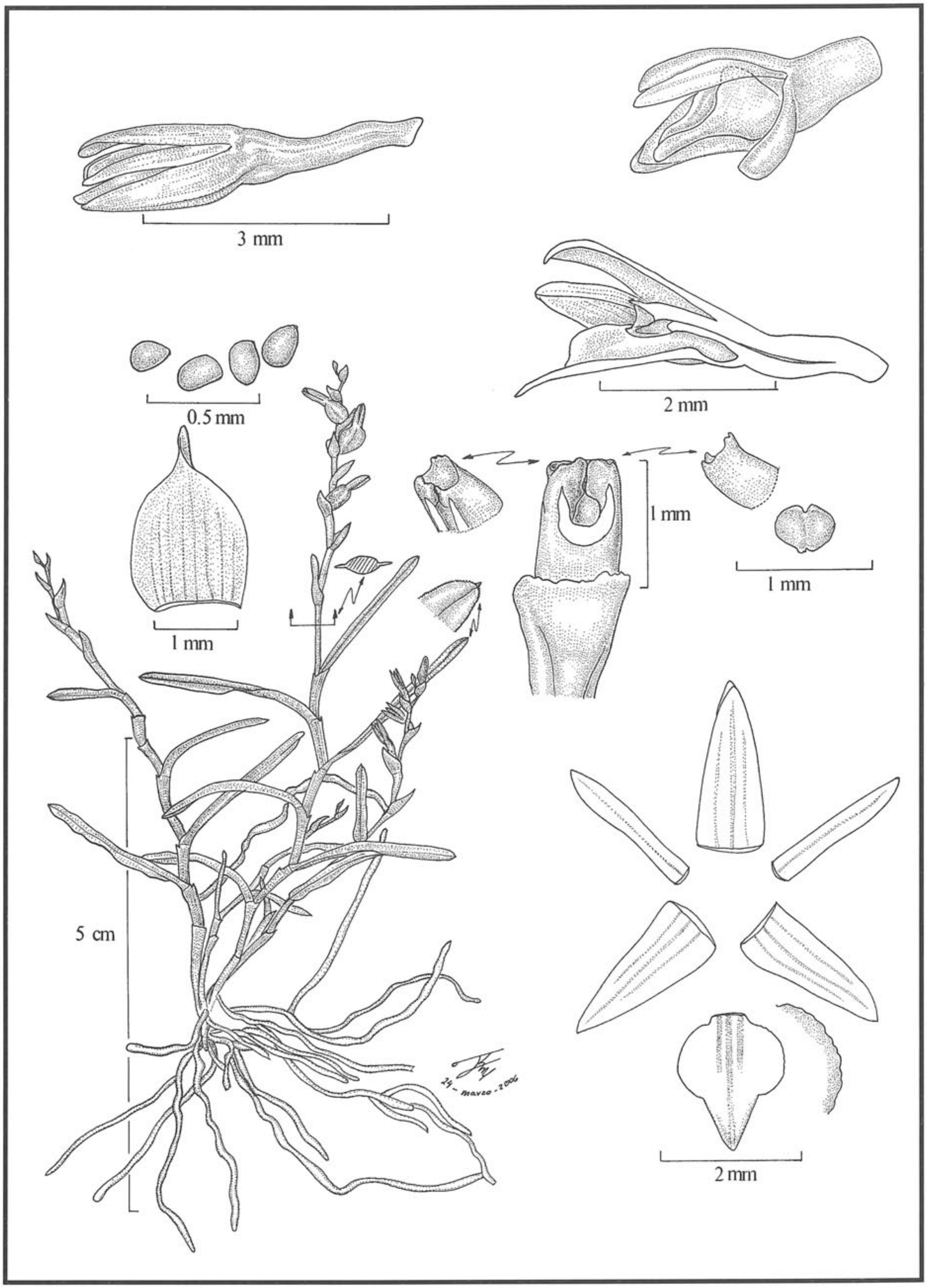
Epiphytic, caespitose, sympodial **herb. Roots** basal, thick. **Stems** simple, cane-like, terete, erect, straight. **Leaves** ca. 23, distributed throughout the apical half of the stems, alternate, articulate, the basal leaves generally deciduous; sheaths tubular, covered by purple warts; blade narrowly elliptic, acute, subcoriaceous, margin entire. **Inflorescence** apical or lateral form the apical ¼ of the stem, racemose, short, lax, few-flowered; peduncle short, terete, thin, provided with 1 cucullate, acute bract. **Floral bracts** much shorter than the ovary, cucullate to widely triangular, acute. **Ovary** terete, thin, not inflated, smooth, somewhat dilated behind the perianth. **Flowers** 2-6 per raceme, simultaneous, resupinate, sepals and petals olive-green, lip and column white, slightly tinged with lilac, callus yellow. **Sepals** partly spreading, to slightly reflexed, free, fleshy, elliptic-obovate, apex rounded, 9-veined, the lateral veins bifid so as to appear 11 veined, margin entire. **Petals** partly spreading to slightly reflexed, free, oblanceolate, obtuse, 3-veined, the lateral veins much branched from the base so as to appear 7-veined, margin entire. **Lip** united to the column, 3-lobed, cuneate, the lateral lobes reaching the apex of the midlobe, margin entire; bicallose, the calli short, thin, rounded, disc provided with 1 prominent, rounded, central, elongate keel reaching the apex of the midlobe; lateral lobes forming a 45° angle with respect to the axis of the lip, subrectangular, ending in an inner acute point, the outer corner rounded, margin slightly revolute; midlobe somewhat cuneate, the apex truncate with a minute apicule. **Column** straight, thin, ending in four truncate lobes. **Clinandrium** short, bilobed, margin erose-dentate. **Anther** oblong, subobovoid, apex truncate, with a low central keel, 4-celled. **Pollinia** 4, oblong-obovoid, laterally compressed, caudicles longer than the pollinia, viscidium lacking. **Rostellum** perpendicular to the axis of the lip, forming a wide sinus. **Nectary** penetrating ¼ of the ovary, narrow, smooth.

OTHER SPECIMENS: Without locality, cult. by *Robledo 153*, AMO! **COLOMBIA: Antioquia:** Valdivia, VI 1975, *Misas sub Ortiz 739*, HPUJ! (Topotype)
OTHER RECORDS: Without locality, cult. by *Robledo 153*, slide, AMO! **COLOMBIA: Antioquia:** Valdivia, collected 1972, illustrated June 1975, *G. Misas sub P. Ortiz 739*, Illustration, HPUJ! Xerox, slide and note, AMO! **ECUADOR: Imbabura-Esmeraldas:** Lita, 700 m, 1 I 1987, *Hirtz 3045*, slide, AMO!
DISTRIBUTION AND ECOLOGY: Only known from northern Colombia: Antioquia, in the municipalities of Valdivia and San Luis, in the northern edge of the valley of the Río Cauca; and north-western Ecuador; epiphytic in humid forest, 400-1150 m altitude. Flowering in January-March, June.
RECOGNITION: *Epidendrum misasii* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is perpendicular to the axis of the column instead of parallel, forming a wide, open sinus, and without a viscidium, and the Wallisii Subgroup which has large, fleshy flowers, the lip entire or 3-lobed, the midlobe of the lip bilobed, the clinandrium-hood petaloid, and the pollinia obovoid, laterally compressed, with granulose caudicles. The species is recognized by the immaculate, olive-green sepals and petals, the white lip tinged with purple, and 3-lobed with the lateral lobes reaching the apex of the midlobe. *Epidendrum medinae* Dodson has flowers of the same color, sepals and petals dotted with red, but plants are taller (1.5 m tall), the sepals and petals are adorned with red dots, and the lateral lobes of the 3-lobed lip are shorter than the midlobe and rounded. *Epidendrum cuneatum* Schltr., from the upper Amazon slope of the Andes from Ecuador to Bolivia, also has green sepals and petals spotted brown, and the lip tinged with violet, but the lip is entire, cuneate-obovate, with the apex bilobed.



CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: In honor of Guillermo Misas of Medellín, Colombia who has illustrated numerous orchids from the Chocó region, and provided the pretype material.
REFERENCES: Hágsater, E., & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. from *Oerstedella* Rchb.f., **Lankesteriana** 5(1): 73.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM MISERRIMUM Rchb.f.

Plate 959

EPIDENDRUM MISERRIMUM Rchb.f., Bonplandia 3: 220. 1855.
Type: GUADELOUPE: In Monte Fulsbunes [forests of Bains Jaunes?], ***Duchassaing s.n.***, Holotype: W 50153! (Cited by Garay & Sweet, 1974. The specimen is only annotated by Reichenbach as "*E. duchassaingi*"). Isotype: P!
Synonyms: *Jacquiniella miserrima* (Rchb.f.) Stehlé, Bull. Soc. Bot. France 84: 425. 1937. *Microepidendrum miserrimum* (Rchb.f.) Brieger (nom. illeg.), Die. Orchideen 3: 557. 1974.
Epidendrum poaeforme Schltr. Repert. Spec. Nov. Regni Veg. Beih. 19: 43. 1923. Type: COSTA RICA: [Heredia:] San Jeronimo, c. 1400 m, May 1921, ***C. Wercklé 17***. Holotype: B (destroyed).

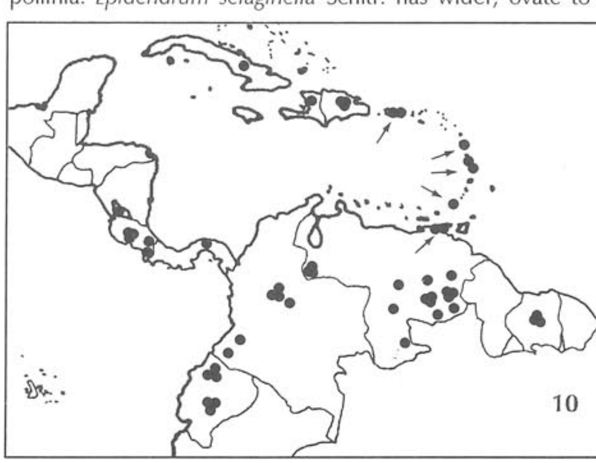
Hierba epífita o raramente terrestre, simpodial, cespitosa, 2.5-9 cm de alto. **Raíces** basales, carnosas, muy delgadas, blancas, 0.2-0.4 mm de grosor. **Tallos** tipo caña, sencillos, originándose de los entrenudos basales de tallos anteriores, teretes, erectos a ligeramente arqueados, ligeramente flexuosos, 1.2-4.5 x 0.03-0.12 cm. **Hojas** 3-6[9], distribuidas a lo largo del tallo, dísticas, alternas, articuladas, generalmente ascendentes; vainas tubulares, algo lateralmente aplanadas, finamente estriadas, 2-6 x 0.3-1.2 mm; con una lígula del lado opuesto de la lámina, pequeña, triangular, subaguda, conduplicada, 0.2-0.3 mm de largo; lámina linear a linear lanceolada, subaguda, con una quilla dorsal baja, margen diminutamente papiloso en el ápice, 6-24 x 0.7-1.7 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, dística, secundiflora, pauciflora, laxa, 1.3-4 cm de largo; pedúnculo lateralmente aplanado, bialado, erecto, recto, 4-24 mm de largo; comúnmente provisto de 1-3 brácteas tubulares en la mitad apical del pedúnculo, conduplicadas y agudas en el ápice, 4-6.5 mm de largo. **Brácteas florales** más largas que el ovario, cuculadas, anchamente ovado elípticas al extenderse, apiculadas, amplexicaules, 1.5-5 mm de largo. **Ovario** muy corto, terete, delgado, algo inflado justo detrás del perianto, liso, 1-2 mm de largo. **Flores** 3-9, simultáneas, no resupinadas, dísticas, carnosas, verdosas a amarillentas, concoloras o con los sépalos ocasionalmente teñidos de púrpura-rojizo en la superficie dorsal, fragancia diurna a miel. **Sépalos** entreabiertos, libres, angostamente triangulares, ligeramente cóncavos, agudos, con una quilla dorsal baja, 3-nervados, margen entero, 2-3 x 0.5-1 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear oblongos, subfalcados, agudos, 1-nervados, margen entero, 1.6-2.6 x 0.2-0.3 mm. **Labelo** unido a la columna, incipientemente trilobado, base anchamente cuneada, 1.6-2.4 x 1.5-2.1 mm; ecalloso y desprovisto de quillas, con 3 venas engrosadas paralelas, la central alargada hasta el ápice de la lámina, el par lateral más corto; lóbulos laterales insertados cerca de la base de la columna, hemielípticos, abrazando a la columna en posición natural sin cubrirla, margen entero a diminutamente crenado, 0.6-0.8 x 0.9-1.4 mm; lóbulo medio angostamente triangular, agudo, carnoso, margen entero, 0.6-0.8 x 0.5-0.8 mm. **Columna** recta, gruesa, muy corta, con un par de dientes laterales agudos, 0.8-1 mm de largo. **Clinandrio** corto, cubriendo totalmente a la antera, margen eroso. **Antera** reniforme, bidentada en el ápice, 4-locular. **Polinios** 4, obovoides, subiguales; caudículas del doble del largo de los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando ¼ del ovario, estrecho a la altura del perianto, inflado justo detrás éste, no ornamentado. **Cápsula** subsésil, subglobosa, con el perianto persistente; pedicelo obsoleto; cuerpo 3-3.5 x 2-2.5 mm; cuello apical obsoleto.

Epiphytic or rarely terrestrial, simpodial, caespitose, very short **herb. Roots** basal, fleshy, very thin. **Stems** cane-like, simple, originating from the basal internodes of the previous stem, terete, erect to slightly arching, slightly flexuous. **Leaves** 3-6[9], distributed throughout the stem, distichous, alternate, articulate, semiterete, generally ascending; sheaths tubular, somewhat laterally compressed, minutely striated, with a ligule opposite the blade, small, triangular, subacute, conduplicate; blade linear to linear-lanceolate, subacute, with a low dorsal keel, margin minutely papillose at the apex. **Inflorescence** apical, racemose, erect, distichous, secund, lax-flowered; peduncle laterally compressed, two-winged, erect, straight; commonly provided along the apical half with 1-3 tubular bracts, conduplicate, apex acute. **Floral bracts** longer than the ovary, cucullate, widely ovate-elliptic when spread, apiculate, amplexicaul. **Ovary** very short, terete, thin, somewhat inflated behind the perianth, smooth. **Flowers** 3-9, simultaneous, non-resupinate, distichous, fleshy, greenish to yellowish, concolor, the sepals occasionally dorsally tinted reddish purple; fragrance diurnal, honey-like. **Sepals** partly spreading, free, narrowly triangular, slightly concave, acute, with a low dorsal keel, 3-veined; the lateral sepals slightly oblique. **Petals** partly spreading, free, linear-oblong, subfalcate, acute, 1-veined, margin entire. **Lip** united to the column, incipiently 3-lobed, base widely cuneate; ecallose, with 3 parallel thickened veins, the central vein reaching the apex of the lip, the lateral pair shorter; lateral lobes inserted near the base of the column, hemielliptic, embracing the column in natural position without covering it, margin entire to minutely crenate; midlobe narrowly triangular, acute, fleshy, margin entire. **Column** straight, thick, very short, with a pair of acute lateral teeth. **Clinandrium-hood** short, totally covering anther, margin erose. **Anther** reniform, apex bidentate, 4-celled. **Pollinia** 4, obovoid, subequal; caudicles twice as long as pollinia. **Rostellum** subapical, slit. **Nectary** penetrating 1/4[th] of ovary, narrowed at perianth, inflated behind perianth, smooth. **Capsule** subsessile, subglobose, perianth persistent.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread in the Antilles, Mesoamerica from Nicaragua through Costa Rica and Panama, and South America in Colombia, Venezuela, Brazil, Surinam, and Ecuador. Epiphyte and rarely terrestrial, 300 to 1600 m altitude ([300] 1800-2700 m in Colombia). Flowering October to May.

RECOGNITION: *Epidendrum miserrimum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the small plants to 9 cm tall, somewhat flexuous stems with linear to linear-lanceolate, 6-24 mm long leaves, small, greenish to yellowish flowers (occasionally tinged reddish purple), the ecallose lip somewhat 3-lobed, with the lateral lobes hemi-elliptic, and the midlobe narrowly triangular, the ovary forming a small, apical vesicle, and 4 pollinia. *Epidendrum paranthicum* Rchb.f. has somewhat larger plants (8.5-13 cm tall), with acicular, linear leaves, the dorsal sepal and petals somewhat reflexed, the 3-lobed lip with a semicircular, minutely apiculate callus, an uninflated ovary and 2 pollinia. *Epidendrum selaginella* Schltr. has wider, ovate to oblong-ovate leaves, the flowers aggregate at the end of the inflorescence, an entire, triangular-cordate lip, the sepals and ovary densely papillose, and 4 pollinia.



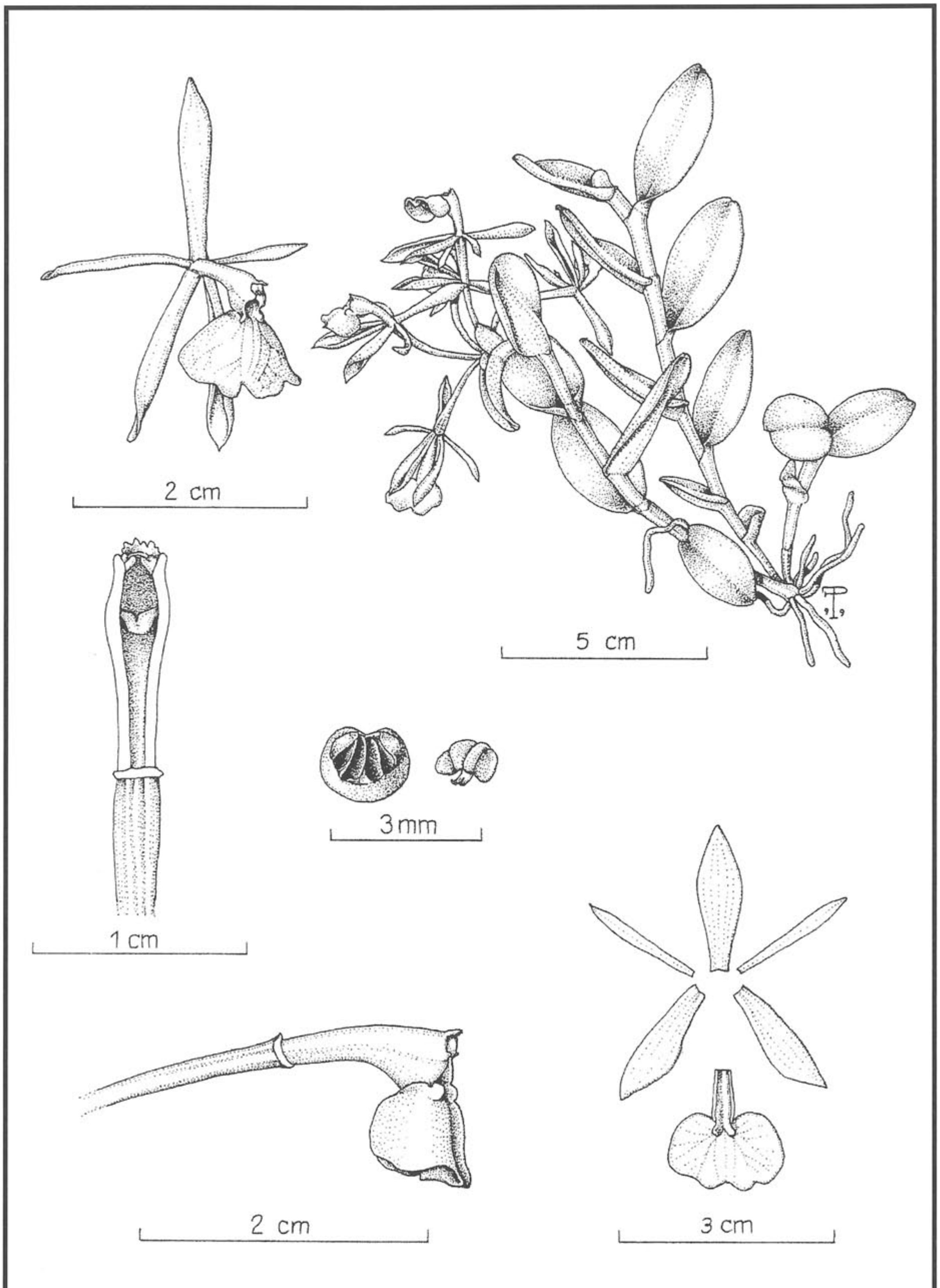
CONSERVATION STATUS: DD. Data deficient. A widely distributed species of no horticultural interest. Apparently extinct in Cuba.

ETYMOLOGY: From the Latin *miserabile*, wretched, poor to the utmost degree, in reference to the small, most modest habit and small flowers of the species.

REFERENCES: Ackerman, J. D., 1992. **The Orchids of Puerto Rico and the Virgin Islands.** University of Puerto Rico Press, 112. Ackerman, J. D., 1995. **An Orchid Flora of Puerto Rico and the Virgin Islands**. The New York Botanical Garden. U.S.A. 68-69. Dunsterville, G. C. K., & L. A. Garay, 1961. **Venezuelan Orchids Illustrated** 2: 134-5. Feldmann, P., & N. Barré, 2001. **Atlas des orchidées sauvages de la Guadeloupe.** Patrimoines Naturels. 70-71. Foldats, E., 1970. **Orchidaceae. Flora de Venezuela** 15(3) 316-317. Instituto Botánico, Caracas. Garay, L. A., & H. R. Sweet, in Howard, 1974. **Flora of the Lesser Antilles**. President and Fellows of Harvard College. U.S.A. 146-147. Nir, M., 2000. **Orchidaceae Antillanae.** DAG Medina Publishing. Inc., New York. U.S.A., 131.

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EPIDENDRUM MONTIS-NARAE Pupulin & L.Sánchez

Plate 960

EPIDENDRUM MONTIS-NARAE Pupulin & L.Sánchez, Lankesteriana 1: 7. 2001.

Tipo: COSTA RICA: San José: Dota, eastern slopes and crest of Cerro Nara, 1050-1140 m, 15 June 1999, ***F. Pupulin, D. Castelfranco & L. Spadari 1140.*** Holotipo: USJ! (Illustration voucher) Clonotipo: AMO

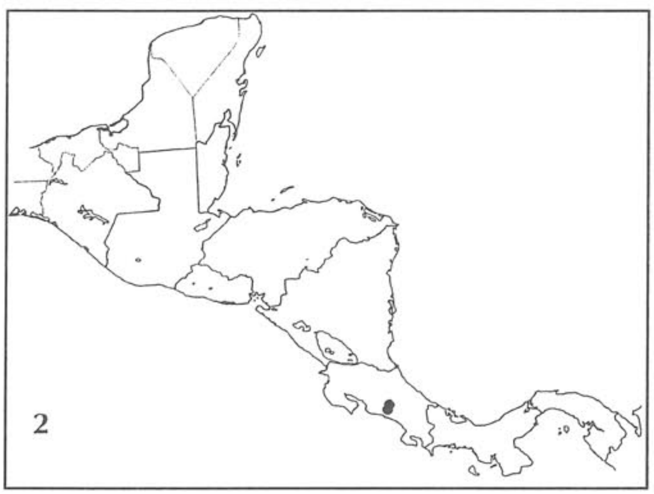
Hierba epífita, simpodial, cespitosa, 11-20 cm de alto incluyendo la inflorescencia. **Raíces** basales, delgadas. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, ligeramente flexuosos, 8-18 x 0.4 cm. **Hojas** 4-8, algo erectas, equidistantes a lo largo del tallo; vaina, tubular, lisa; lámina elíptica a elíptico ovada, ápice asimétricamente bilobado, subcoriácea, lisa, verde claro, desiguales, las inferiores y ocasionalmente la última más pequeñas, 2.4-3.7 x 1.4-1.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, sésil, subcorimbosa. **Bráctea floral** mucho más corta que el ovario, triangular, lisa, 3 mm de largo. **Flores** 5-7, simultáneas, resupinadas, verde a verde amarillentas, bronce pálido al envejecer, fragancia nocturna a frutas. **Ovario** terete, no inflado, liso, 20-25 mm de largo. **Sépalos** extendidos, libres, oblanceolado elípticos, agudos, subcoriáceos, glabros, 5-nervados, margen entero, revoluto, el dorsal 21 x 6.5 mm; los laterales subfalcados, 23 x 5.3 mm. **Pétalos** extendidos, linear ligulados, agudos, membranáceos,1-nervados, margen entero, revoluto, 21 x 2.1 mm. **Labelo** unido a la columna, trilobado, subreniforme a transversalmente elíptico cuando se extiende, 11.2 x 17.1 mm; bicalloso, los callos pequeños y rectos, divergentes; lóbulos laterales mucho más grandes que el medio, semiorbicular transversalmente semielípticos, enteros; lóbulo medio pequeño, bilobado, formando dos lóbulos transversalmente semielípticos, con un seno amplio. **Columna** recta a ligeramente arqueada, delgada, dilatada hacia el ápice, 12.5 mm de largo. **Clinandrio** corto, entero, margen eroso. **Antera** reniforme, 4-locular. **Polinios** 4, subiguales, lateralmente comprimidos; caudículas ligeramente más largas que los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, somewhat laterally compressed, slightly flexuous. **Leaves** 4-8, somewhat erect, distributed throughout the stems; sheath tubular, smooth; blade elliptic to ovate-elliptic, apex unequally bilobed, subcoriaceous, smooth, light green, unequal, the lower ones and occasionally the apical leaf smaller. **Inflorescence** apical, from the mature stem, flowering only once, sessile, subcorymbose. **Floral bract** much shorter than the ovary, triangular, smooth. **Flowers** 5-7, simultaneous, resupinate, green to yellowish green, bronze with age; nocturnal fragrance of fruits. **Ovary** terete, smooth. **Sepals** spreading, free, elliptic-oblanceolate, acute, subcoriaceous, glabrous, 5-veined, margin entire, revolute; the laterals somewhat falcate. **Petals** spreading, linear-ligulate, acute, membranaceous, 1-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, subreniform to transversely elliptic when spread; bicallose, the calli small, straight, somewhat divergent; lateral lobes much larger than the midlobe, semiorbicular-transversely semielliptic, entire; midlobe small, bilobed, forming two transversely semielliptic lobes, with a wide sinus. **Column** straight to slightly arched, thin, dilated towards the apex. **Clinandrium-hood** short, entire, margin erose. **Anther** reniform, 4-celled. **Pollinia** 4, subequal laterally compressed; caudicles slightly longer than the pollinia, soft and granulose; viscidium viscous, translucent. **Rostellum** apical, slit.

OTHER SPECIMENS: COSTA RICA: Sin localidad precisa, planta confiscada, floreció en el Jardín Botánico de Gaia, *GBC 1353*, USJ. **Puntarenas:** Quepos Area, Savegre, Santo Domingo, along the banks of Río Savegre, 27 XI 1999, *Pupulin 1848*, USJ. Ibid. *Pupulin 1849*, USJ.

DISTRIBUTION AND ECOLOGY: Endemic to the Pacific drainage of central Costa Rica. On the eastern slopes and crest of Cerro Nara and Savegre River area. Epiphytic in premontane rain forest to cloud forest, between 90 and 1140 m altitude. Flowering in November.

RECOGNITION: *Epidendrum montis-narae* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical, sessile inflorescence, without spathaceous bracts, rarely with a short peduncle, one-flowered to corymbose, fleshy, green to yellowish-green, rarely white flowers. The species can be recognized by its somewhat laterally compressed stems, ovate-elliptic, suberect leaves, 5-7, green to yellowish-green flowers, elliptic-oblanceolate, acute sepals, linear-ligulate, acute petals, 3-lobed lip, subreniform to transversally elliptic when spread, semiorbicular-transversely elliptic, entire lateral lobes, midlobe forming two small lobules, with a shallow sinus, apiculate. It is similar to *Epidendrum hameri* Hágsater & L. Sánchez, from the Pacific slopes of the Volcán Mombacho in Nicaragua, but that species has imbricating upper leaves, 1-2 small, very pale yellow-green, translucid flowers, obovate, rounded sepals, linear-oblanceolate, rounded petals, and dolabriform, crenate lateral lobes of the lip, with the midlobe separated from the lateral lobes by wide sinuses. *Epidendrum citrosmum* Hágsater, another similar species from Pacific slopes, endemic to the semideciduous and deciduous forests of the Sierra Madre in southern Mexico, has terete stems, bright green flowers, rounded sepals and petals, and a reduced, entire clinandrium hood. *Epidendrum vulgoamparoanum* Hágsater & L.Sánchez from the Pacific watershed of Costa Rica and Panama, found in seasonally dry and secondary forests along the Pacific coast, has taller plants and larger flowers, elliptic to ovate leaves, a widely obovate, obscurely 3-lobed lip with many thickened veins; the midlobe is obscurely bilobed, and the prominent clinandrium-hood is erose-fimbriate.

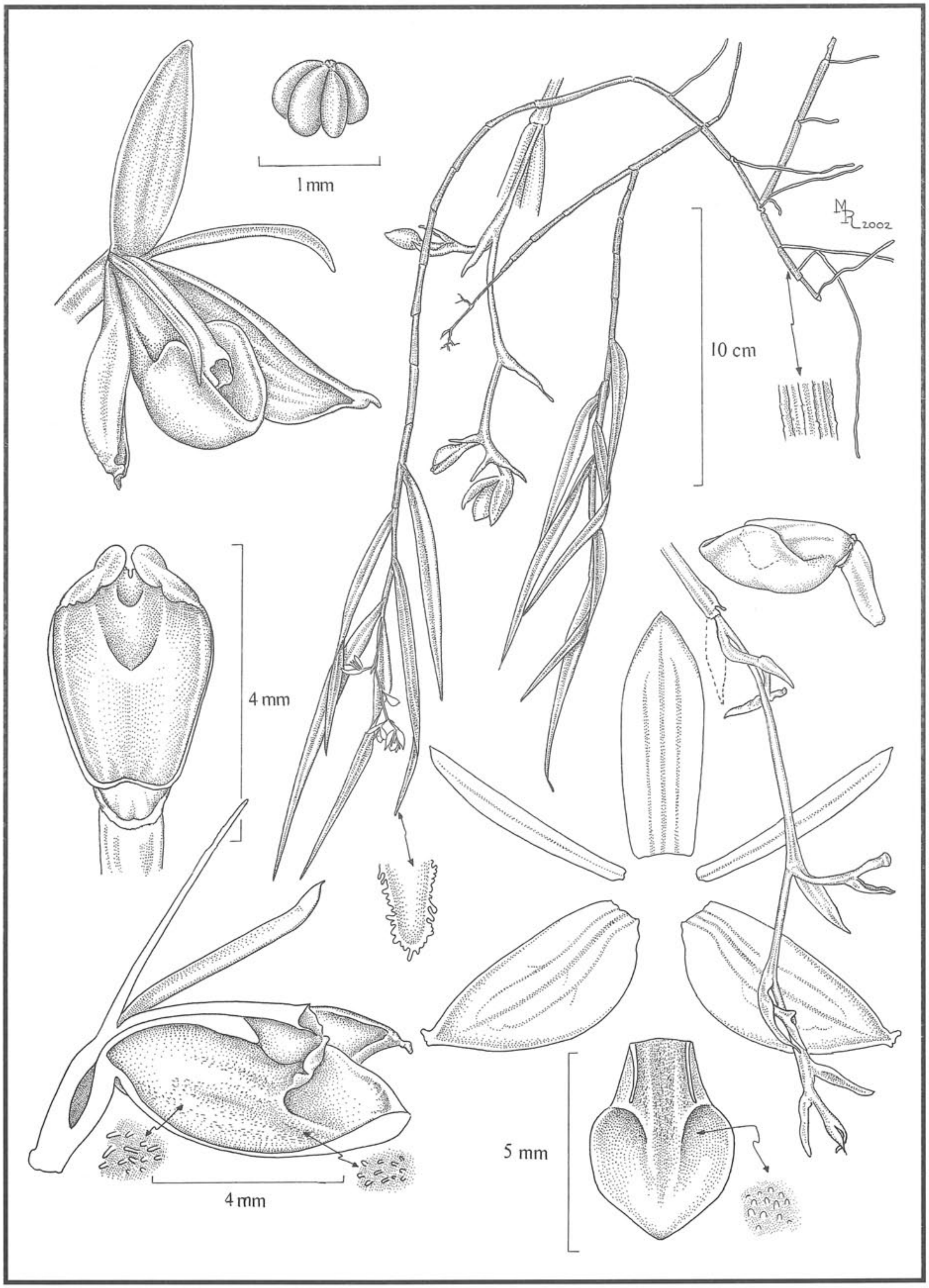


CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: The epithet *"montis-narae"* refers to slopes of Cerro Nara where the type was collected.

REFERENCE: Pupulin, F. 2001. Addenda Orchidaceis Quepoanis. *Lankesteriana* 1: 1-28.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: F. Pupulin** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM MONTISPICHINCHENSE Hágsater & Dodson **Plate 961**

EPIDENDRUM MONTISPICHINCHENSE Hágsater & Dodson, Icon. Orch. (Mexico City) 4(1): pl 461. 2001.

Type: ECUADOR: Pichincha: crescivit in declivitate occidentale Montes Pichincha, 8000 ft, 20 June 1863, ***W. Jameson 617.*** Holotype: P! Isotype: BM!

Hierba epífita, erecta a colgante, ramificada, de más de 45 cm de alto. **Raíces** distribuidas hacia la zona basal tanto en el tallo principal como en las ramificaciones inferiores, delgadas, 0.5-0.7 mm de grosor. **Tallos** teretes, delgados, ramificados, el principal de más de 45 x 0.19 cm, las ramas producidas hacia la parte media del tallo anterior, de 11-32 x 0.1-0.18 cm. **Hojas** en el tallo principal caedizas, 5-8 en las ramificaciones, generalmente distribuidas hacia la mitad apical del tallo; vaina tubular, estriada y ligeramente verrugosa, hasta 3.3 cm de largo; lámina angostamente lanceolada, ligeramente falcada, acuminada, margen apical diminutamente dentado, 4.5-10 x 0.34-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, de los tallos principales y de las ramificaciones, florece durante largo tiempo, arqueado nutante, 1-5 cm de largo, formado por una serie de 2-4 módulos racemosos y dísticos, constituidos por un pedúnculo terete de 1.3-1.7 cm de largo, filiforme, desigualmente bialado hacia la primera bráctea, seguido por un raquis flexuoso de 1-4 flores; de la primera bráctea se produce un nuevo módulo. **Brácteas florales** mucho más largas a más cortas que el ovario, gradualmente más pequeñas hacia el ápice del raquis, triangulares, acuminadas, 2-6 mm de largo. **Flores** 1-4 por racimo, sucesivas, una o dos abiertas a la vez, dísticas, el labelo siempre orientado hacia el raquis; pétalos verdes, sin datos de fragancia. **Ovario** corto, terete, delgado, no inflado, no ornamentado, 4 mm de largo. **Sépalos** extendidos, libres, 3-nervados, margen entero, superficie dorsal escasamente verruculosa; el **dorsal** oblongo elíptico, obtuso, 6.1-6.8 x 1.4-2.0 mm; los **laterales** ovados, oblicuos, agudos, con una quilla dorsal, 6.0-6.8 x 2.6 mm. **Pétalos** extendidos, libres, lineares, obtusos, 1-nervados, margen entero, 5.8 x 0.5-0.7 mm. **Labelo** unido a la columna, entero, suborbicular, obtuso, carnoso, la columna unida al labelo por dentro del margen basal, de manera que por fuera de la columna aparecen dos alas angostas que se acercan al tercio basal de la columna; en la base de la lámina aparece un cunículo de cada lado; el labelo abrazando a la columna en posición natural sin traslaparse, la parte libre 3.5-4.2 x 3.5-5.0 mm; ecalloso; el disco escasamente puberuloso. **Columna** gruesa, arqueada en la mitad basal, especialmente con respecto del ovario, 3.8-4.0 mm de largo. **Clinandrio** reducido, entero. **Antera** no vista. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** sin traspasar el perianto, amplio, escasamente puberuloso a la altura de la cavidad estigmática, papiloso detrás de esta. **Cápsula** no vista.

Epiphytic, hanging, branching **herb. Roots** thin, scarce, distributed towards the basal area of the main stem and lower branches. **Stems** terete, thin, straight, the branches produced from the middle of the previous stem. **Leaves** 5-8, distributed throughout the apical half of the stems; sheaths striated, slightly verrucose; blade narrowly lanceolate, slightly falcate, acuminate, apical margin minutely dentate. **Inflorescence** apical, from the main stem and branches, flowering for a long time, arching-nutant, formed by a series of 2-4 racemose, distichous modules constituted by a terete, filiform, peduncle, unequally two-winged towards the first bract, followed by the flexuous rachis; the next module is produced from the first bract which does not subtend any flower. **Floral bracts** much longer to shorter than the ovary, triangular, acuminate. **Flowers** 1-4 per raceme, successive, one or two open at a time, the lip always facing the rachis, petals green. **Ovary** short, terete, thin. **Sepals** spreading, free, 3-veined, margin entire, the dorsal surface scarcely verruculose; **dorsal** oblong-elliptic, obtuse; **laterals** ovate, oblique, acute, with a dorsal keel. **Petals** spreading, free, linear, obtuse, 1-veined, margin entire. **Lip** united to the column, entire, suborbicular, obtuse, fleshy, the column united to the lip inside the margin so that outside the column there are two narrow wings which reach down to about the basal third of the column, at the base of the blade there is a cunicule on each side of the lip; the sides of the lip are upturned so as to embrace the column without overlapping; ecallose, the disc scarcely puberulose. **Column** thick, arching especially at the base with respect to the ovary. **Clinandrium hood** reduced, entire. **Nectary** without surpassing the perianth, wide, scarcely puberulose in front of the stigmatic cavity, papilose behind.

OTHER SPECIMENS: BOLIVIA: La Paz: Nor-Yungas: 2.2 km NE (below) Chuspipata, 3000 m, *Solomon 7291*, MO! NY! (Illustration voucher) SEL! Chuspipata, 2900 m, 20 II 1986, *Solomon 14927*, MO! Río Coroicó, 2800 m, II 1980, *Vásquez 333*, SEL! **ECUADOR: Morona-Santiago:** General Plaza-Gualaceo km 51-54 km, 2900-3100 m, 12 VI 1979, *Løjtnant 14692*, AAU! G! **Pichincha:** W of Calacali, 2500 m, 24 V 1979, *Løjtnant 13681*, AAU! **PERU: Amazonas:** Provincia de Luya:, 2000-2500 m, 20 VI 1991, *Díaz 4424*, MO!

DISTRIBUTION AND ECOLOGY: Ranges from Ecuador to Bolivia along the eastern slope of the Cordillera Real, a part of the Cordillera Oriental of the Andes NE of La Paz; at 2800-3000 m elevation in cloud forest with tree ferns. Flowering in February and March, probably longer.



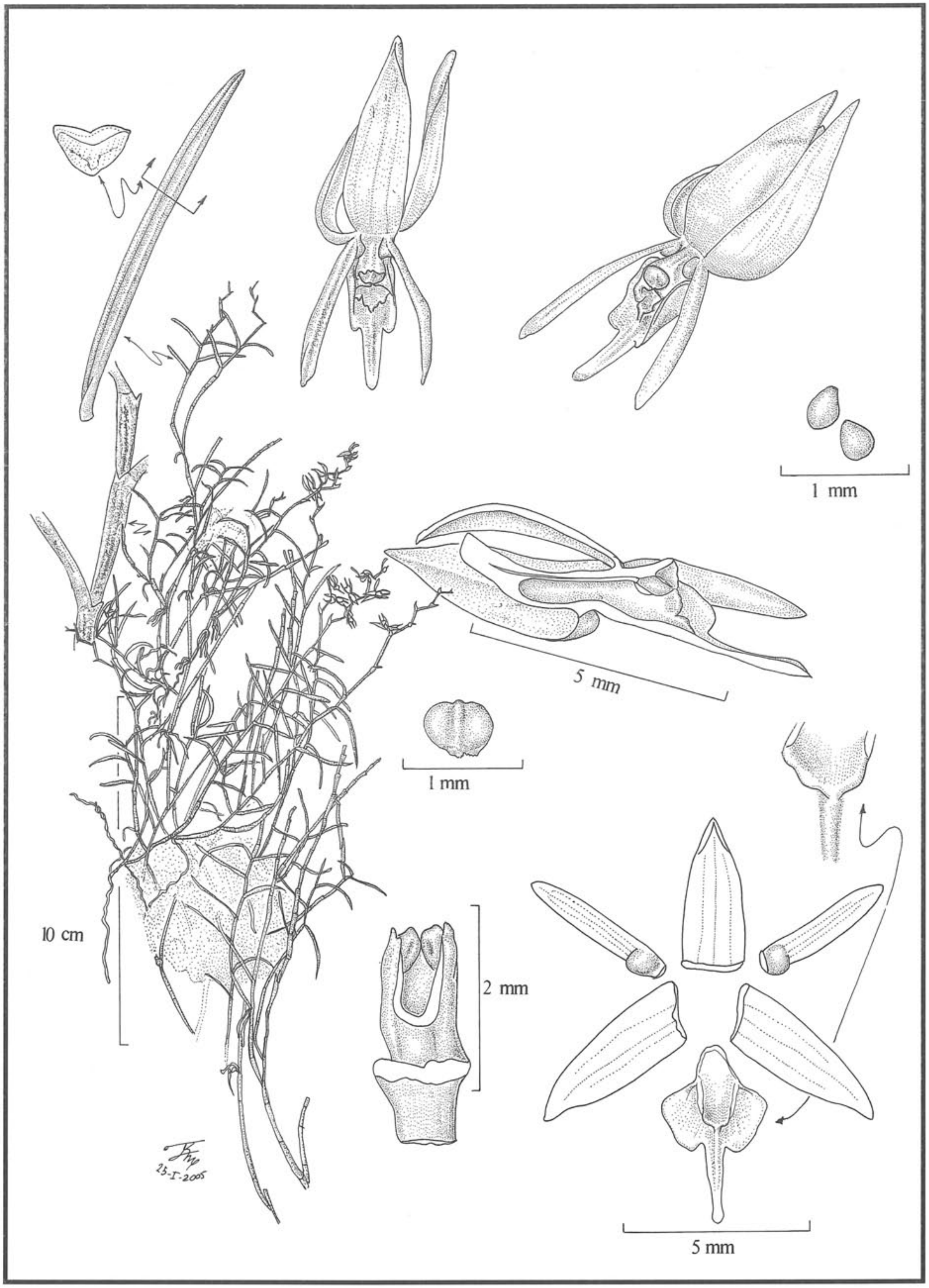
RECOGNITION: *Epidendrum montispichinchense* belongs to the Elleanthoides Group, Guacamayense Subgroup recongized by the thin, stragling, branching plants with long, narrow, falcate, grassy leaves and paniculate, filiform inflorescences with small flowers. The species is recognized by the long leaves, the flowers with the base of the column much thickened, the orbicular lip, jointed to the sides of the column. It closely resembles *E. guacamayense* Hágsater & Dodson which has a zigzag peduncle, the lip is minutely papillose and covers the column completely, leaving only a circular aperture at the apex, the column is geniculate with respect to the ovary and arches slightly upwards towards the apex. The Colombian species *Epidendrum elleanthoides* Schltr. has smaller, simultaneous flowers, sepals 4.5 mm long, with a narrow nectary.

CONSEVATION STATUS: DD. Data deficient. Widespread, probably often overlooked by collectors. Of no horticultural interest.

ETYMOLOGY: In reference to Mount Pichincha where the type was collected.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM MUSCICOLUM Schltr. **Plate 962**

EPIDENDRUM MUSCICOLUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 214. 1923.

Type: COSTA RICA: [Alajuela:] Los Angeles de San Ramón, 1050 m, 1 July 1921, ***Alberto M. Brenes 44.*** Holotype: B, destroyed; Lectotype designated by Barringer (1986): AMES 28844; Isotypes CR 25799! NY!
Synonyms: *Epidanthus muscicola* (Schltr.) L. O. Williams, Bot. Mus. Leafl. 8: 151. 1940.
Epidendrum linifolium Ames, Schedul. Orchid. 7: 7, t. 20. 1924. Type: COSTA RICA: [San José:] La Palma, 8 VII 1923, ***Harvey E. Stork 417.*** Holotype: AMES 27168. Isotype: MO!

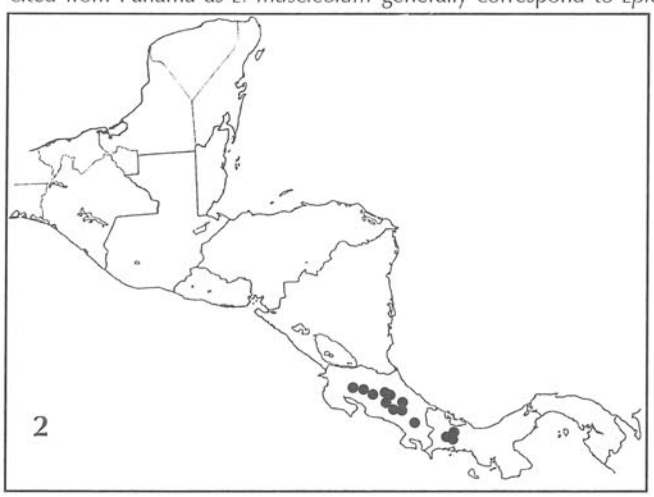
Hierba epífita o terrestre, simpodial, escandente, 11-27 cm de alto. **Raíces** originándose en la base de cada tallo, escasas, filiformes, blancas, 0.1-0.6 mm de grosor. **Tallos** sencillos, producidos de tallos anteriores, tipo caña, teretes, muy delgados, erectos, rectos, 7-20 x 0.05-0.1 cm. **Hojas** 6-14, distribuidas a todo lo largo del tallo, alternas, articuladas, comúnmente erecto extendidas; vaina tubular, finamente estriada, 4-14 x 0.5-1 mm; con una lígula muy pequeña del lado opuesto de la lámina, triangular, subaguda, conduplicada, 2 mm de largo; lámina acicular, subaguda, semiteretes, subcoriácea, margen entero, 1-3.8 x 0.05-0.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, secundiflora, laxa, erecta, 3-9 cm de largo; pedúnculo lateralmente aplanado, recto, 17-31 mm de largo; provisto en la parte media de una bráctea semejante a las florales, angostamente lanceolada, aguda, abrazadora, 3-5 mm de largo; raquis fractiflexo. **Brácteas florales** más cortas que el ovario, anchamente triangulares, agudas, amplexicaules, 1.5-1.7 mm de largo. **Ovario** terete, delgado, no inflado, liso, 2-3 mm de largo. **Flores** 3-11, sucesivas, resupinadas, dísticas, raramente rosado con lavanda, comúnmente blancas a crema, en ocasiones con la columna teñida de violeta; fragancia dulce. **Sépalos** reflexos, libres, oblongo lanceolados o angostamente triangulares, agudos, 3-nervados, margen extendido, entero, 3-5 [6] x 1.5-1.6 mm; los **laterales** oblicuos. **Pétalos** porrectos, paralelos a la columna, libres, linear oblongos, subagudos, 1-3-nervados, con un engrosamiento orbicular y carnoso en la base de los mismos, margen extendido, entero, 2.5-4 [5] x 0.5-0.8 mm. **Labelo** unido a la columna, 3-lobado, ligeramente cuneado en la base, margen entero, 2.5-4 x 1.8-3 mm; unicalloso, el callo laminar, truncado, algo cóncavo, disco provisto de una quilla, baja; lóbulos laterales insertados cerca de la base de la columna, oblicuamente rectangular triangulares, los ángulos redondeados, 1 x 1 mm; lóbulo medio linear subulado, obtuso, 1.5-2.5 mm de largo. **Columna** muy corta, recta, gruesa, 1-1.5 mm de largo. **Clinandrio** corto, margen subcrenulado. **Antera** reniforme, 2-locular. **Polinios** 2, obovoides. **Róstelo** apical, hendido. **Lóbulos laterales del estigma** pequeños. **Nectario** penetrando la mitad del ovario, amplio, no inflado, no ornamentado. **Cápsula** subglobosa, con el perianto persistente; pedicelo 2 mm de largo; cuerpo 4 x 4 mm; cuello apical ausente.

Epiphytic or terrestrial, sympodial, scandent **herb. Roots** originating from the base of each stem, scarce, filiform, white. **Stems** simple, produced from the previous stem, cane-like, terete, very thin, erect, straight. **Leaves** 6-14, distributed throughout the stem, alternate, articulate, commonly erect-spreading; sheath tubular, minutely striated, with a small ligule, narrowly triangular, acute, opposite the blade; blade acicular, subacute, semiterete, subcoriaceous, conduplicate, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, lax, erect; peduncle laterally compressed, straight, provided with a bract in the middle; rachis zigzag. **Floral bracts** shorter than the ovary, widely triangular, acute, amplexicaule. **Ovary** terete, thin, not inflated, smooth. **Flowers** 3-11, successive, resupinate, distichous, rarely pink with lavender, frequently white to cream colored, sometimes tinged with violet; fragrance sweet. **Sepals** reflexed, free, oblong-lanceolate or narrowly triangular, acute, 3-veined, margin spreading, entire, the lateral sepals oblique. **Petals** porrect, parallel to the column, free, linear-oblong, subacute, 1-3-veined, with a thickened, orbicular, fleshy process at the base, margin spreading, entire. **Lip** united to the column, 3-lobed, base slightly cuneate, margin entero; callus single, a truncate blade, somewhat concave, disc provided with a single, low, keel; lateral lobes inserted near the base of the column, obliquely rectangular triangular, truncate, the corners rounded; midlobe linear subulate, obtuse. **Column** very short, straight, thick. **Clinandrium-hood** short, margin subcrenulate. **Anther** reniform, 2-celled. **Pollinia** 2, obovoid. **Rostellum** apical, slit. **Nectary** penetrating half the ovary, wide, not inflated, smooth. **Capsule** subglobose, pedicel thin, perianth persistent.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread on the Cordilleras in Costa Rica and western Panama, ranging from 700-2000 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum muscicolum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the thin stems, acicular leaves, rarely pink with lavender, frequently white or cream colored flowers, the petals porrect, with a very evident, basal fleshy-thickened orbicular process, the lip 3-lobed, one keel in front of the callus, and the midlobe linear subulate. It is similar to *Epidendrum talamancanum* (Atwood) Mora-Retana & J.García, with plants as tall (to 30 cm), but linear leaves, sepals 4.2-7 mm long, the lip 3-lobed with 3 keels in front of the callus. The specimens cited from Panama as *E. muscicolum* generally correspond to *Epidendrum infundibulum* Hágsater & E.Santaigo which has shorter plants (to 15 cm tall) with shorter leaves (1-1.7 cm long), infundibuliform floral bracts, ovate-rhombic petals partly spreading, not fleshy-thickened at the base, and the bidentate apex of the callus upturned in natural position.

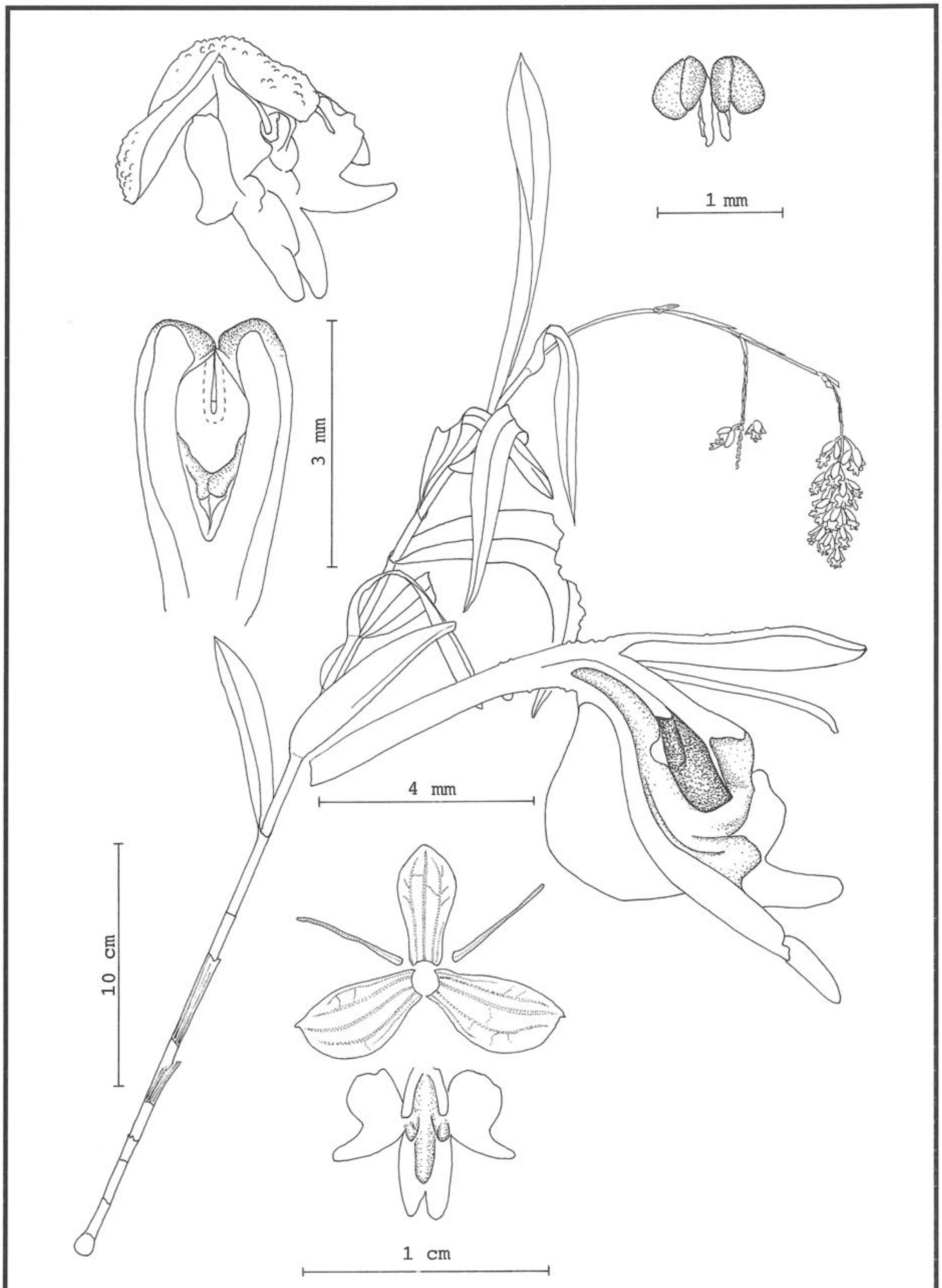


CONSERVATION STATUS: DD. Data deficient. Apparently common and relatively widespread in its range.

ETYMOLOGY: From the Latin *musci*, moss, and *–cola*, inhabitant, in reference to its tendency to grown amidst mosses.

REFERENCES: Barringer, K., 1991, **A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae),** Britonia 43(4): 245-247. Dressler, R. L., 1983, **Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá,** Orquídea (Méx.) 9(1): 13-19. Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 271, San José C.R. Editorial de la Universidad de Costa Rica. Williams, L. O., 1940, **A new genus of the Orchidaceae from Central America,** Bot. Mus. Leafl. 8: 148-151.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM MYODES Rchb.f. **Plate 963**

EPIDENDRUM MYODES Rchb.f., Beitr. Orchid.-K. C. Amer. 86. 1866.

Type: COSTA RICA: [Cartago: Istarú:] Naranjo [de Juan Viñas, 1200 m], ***Wendland 1111.*** Holotype: W! (Illustration AMES!).

Synonyms: *Epidendrum polyanthum* Lindl. var. *myodes* (Rchb.f.) Ames, F.T.Hubb. & C.Schweinf., Bot. Mus. Leafl. 3: 73. 1935.

Epidendrum quinquelobum Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 126. 1922.

Type: COSTA RICA: Vulcan Barba [Barva], um 2200 m, blühend im Januar 1909, ***Alexander & Curt Brade 1124.*** Holotype: B (destroyed).

Hierba epífita, simpodial, cespitosa, erecta a ligeramente arqueada, 35-105 cm de alto, incluyendo la inflorescencia. **Raíces** basales, carnosas, filiformes a delgadas, 1.8-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 20-45 x 0.5-0.7 cm. **Hojas** 7-13, dísticas, distribuidas en los dos tercios apicales del tallo; vaina foliar, tubular, terete, papiráceas cuando viejas y después de haber perdido el limbo, 1.5-4 cm de largo; lámina angostamente elíptico lanceolada, cortamente acuminada, mucronada, aristada, ligeramente carinada, subcoriácea, margen entero, extendido, 14-18 x 2-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, raramente lateral en los tallos viejos, pluriracemosa, densa, 20-33 cm de largo, puede florecer de los nudos de la inflorescencia primaria en años posteriores, formando racimos compuestos; pedúnculo 6-12 cm, cubierto por 2-4 brácteas imbricadas, tubulares, oblongo triangulares, acuminadas, 2-4 cm de largo; raquis terete, liso. **Brácteas florales** más cortas que el ovario, abrazadoras, ovado triangulares, agudas, 1-2 x 0.5-1 mm. **Ovario** terete, verrugoso papiloso, 5-7 x 0.4-0.7 mm. **Flores** 15-40, por racimo, simultáneas, resupinadas, amarillo anaranjadas a amarillo verdosas, fragancia no registrada. **Sépalos** entreabiertos, libres, elíptico obovados, obtusos, dorsalmente verrugoso papilosos, 3-nervados, margen entero, extendido, 3-5 x 1.2-2.5 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, filiformes, agudos, 1-nervados, margen entero, extendido, 3.5-5 x 0.2-0.3 mm. **Labelo** unido a la columna, trilobado, base cordada, truncada, carnoso, 3-5.5 x 3.5-5.5 mm; bicalloso, los callos laminares, conspicuos; el disco con una carina prominente, la cual se prolonga hasta el seno del lóbulo medio; lóbulos laterales bilobados con un seno profundo y amplio, los basales suborbiculares a triangulares, redondeados a agudos, los apicales agudos, del mismo tamaño a más largos que los basales, 1.5-2 x 2.5-2.8 mm; lóbulo medio oblongo rectangular, el margen entero, el ápice hendido, 1.8-2.2 x 1-1.4 mm. **Columna** recta, obcónica, delgada en la base, 5-6 x 1.7-2.2 mm. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio viscoso, transparente. **Rostelo** apical hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando 1/5 del ovario, liso. **Cápsula** elipsoide, pedicelo corto, terete, 4.5 mm de largo, cuerpo 22 x 10 mm, sin cuello apical.

Epiphytic, sympodial, caespitose, erect to slightly arching **herb. Roots** basal, fleshy, filiform to thin. **Stems** simple, cane-like, terete, straight. **Leaves** 7-13, distichous, distributed throughout the apical 2/3 of the stem; sheath tubular, terete, papiraceous when old; blade narrowly elliptic-lanceolate, short-acuminate, aristate, slightly carinate, subcoriaceous, margin entire, spreading. **Inflorescence** apical, rarely lateral in older stems, compound racemose, densely flowered, producing new racemes from the internodes of the peduncle of the primary raceme; peduncle short, covered by 2-4 imbricating, tubular bracts, these oblong-triangular, long, acuminate; rachis terete, smooth. **Floral bracts** very short, much shorter than the ovary, ovate-triangular, acute. **Ovary** short, terete, verrucose-papillose. **Flowers** 15-40 per raceme, simultaneous, resupinate, orange-yellow to greenish yellow. **Sepals** partly spreading, free, elliptic-obovate, obtuse, dorsally verrucose-papillose, 3-veined, margin entire, spreading, the lateral sepals oblique. **Petals** partly spreading, free, filiform, acute, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, fleshy; bicallose, the calli laminar, conspicuous; disc with a prominent keel running down the middle of the lip; lateral lobes bilobed with a deep sinus, the basal lobe suborbicular to triangular, the apical lobe acute, as long as or longer than the basal lobe; midlobe oblong-rectangular, apex slit. **Column** straight, obconical, basally thin. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-lobed. **Pollinia** 4, narrowly obovoid, laterally compressed; caudicles soft and granulose, as long as the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/5th of the ovary, narrow, smooth. **Capsule** ellipsoid, pedicel short, terete, apical neck obsolete.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica and western Panama, epiphytic in wet forests, at 600-2000 m altitude. Flowering from December to May.

RECOGNITION: *Epidendrum myodes* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not subcorymbose racemes. The species is recognized by the delicate plants, terete stems, small flowers, sepals 3-5 mm long, and the bilobed lateral lobes of the lip with the basal lobe rounded and the long, acuminate, falcate, apical lobe. *Epidendrum muricatisepalum* Hágsater, an endemic from Costa Rica has laterally compressed stems, large flowers sepals 10-11 mm long, the ovary and dorsal surface of the sepals densely muricate-strigous, and the lateral lobes of the lip divided into variously angled, subtriangular lobes. *Epidendrum pergameneum* Rchb.f. from Costa Rica and Panama has laterally compressed stems, apical and lateral inflorescences, though these are short, verrucose-papillose sepals and ovary, and the sepals are 10-13 mm long and the lobes of the lip twice as long as broad. *Epidendrum polyanthum* Lindl. from México and Guatemala has large plants and flowers, terete stems, and the lateral lobes of the lip semiovate with a small sinus in the margin.



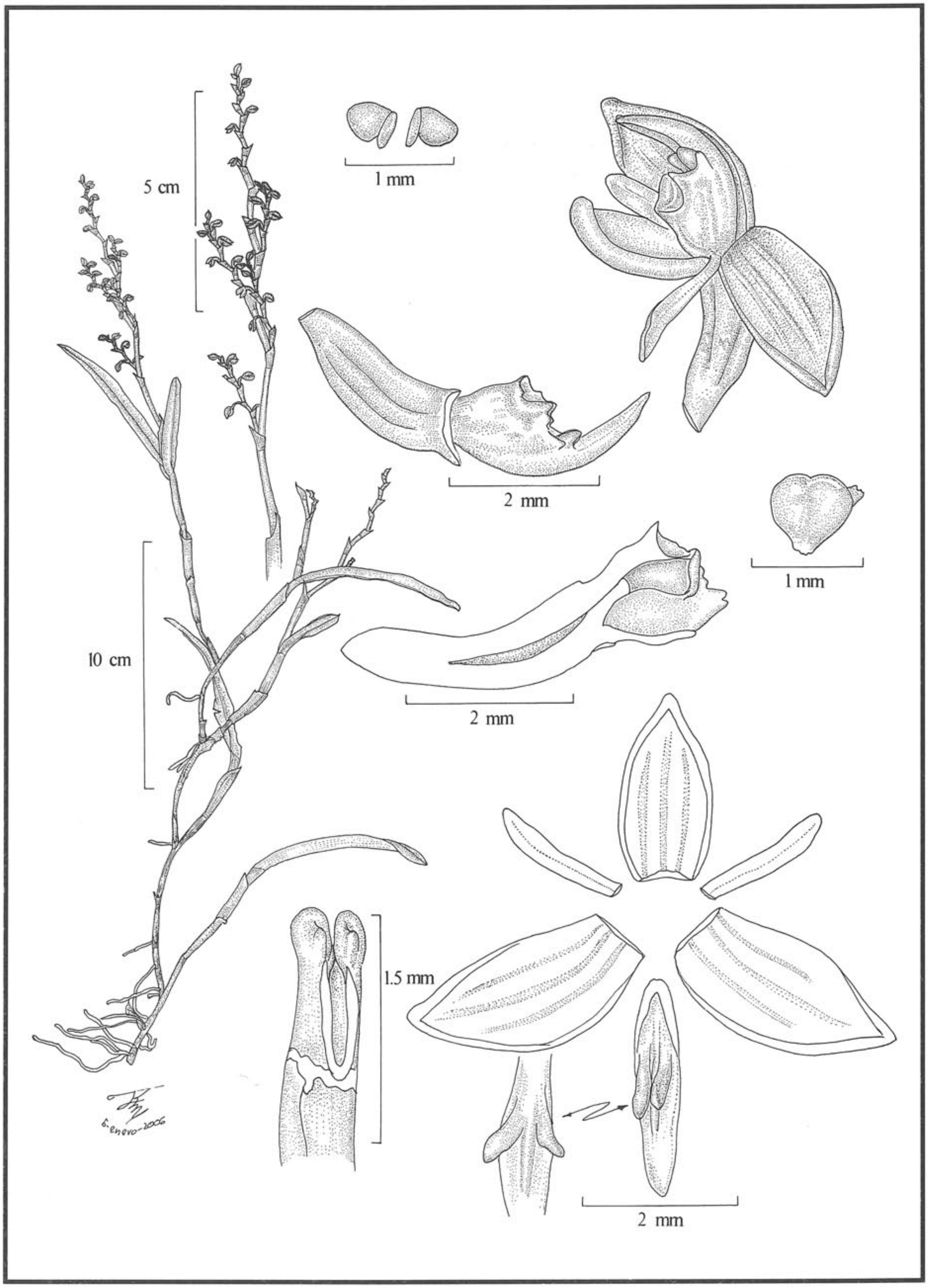
CONSERVATION STATUS: DD. Data deficient. Apparently common and widespread in Costa Rica.

ETYMOLOGY: From the Greek μυς, mouse, and the ending -οειδης, -odes, resembling, thus resembling a mouse, possibly due to the small sized lip with the large, rounded, ear-like basal half of the lateral lobes.

REFERENCES: Hágsater, E., in Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Missouri Botanical Garden, 3: 144.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM NERVOSIFLORUM Ames & C.Schweinf. Plate 964

EPIDENDRUM NERVOSIFLORUM Ames & C.Schweinf., Schedul. Orchid. 8: 47. 1925.

Type: COSTA RICA: Cartago: La Estrella, 5500 ft, 27 III 1924, ***Charles H. Lankester 790***. Holotype: AMES 28296!

Synonyms: *Epidanthus nervosiflorum* (Ames & C.Schweinf.) Garay, Orch. Digest 41: 22. 1977. *Neowilliamsia nervosiflora* (Ames & C.Schweinf.) Dressler, Orquídea (Mexico City) 8(1): 29. 1981.

Hierba epífita, simpodial, escandente, 12.2-42 cm de alto. **Raíces** producidas en los entrenudos basales de cada tallo, filiformes, blancas, 0.2-0.7 mm de grosor. **Tallos** sencillos, producidos de los entrenudos intermedios de tallos anteriores, tipo caña, teretes hacia la base y lateralmente aplanados hacia el ápice, ancipitosos, delgados, erectos, rectos, 7.5-9 x 0.1-0.3 cm; cubiertos en la base hasta por vainas no foliáceas, tubulares, 7-15 mm de largo. **Hojas** 1-4, distribuidas en la mitad apical de los tallos, alternas, articuladas, erecto extendidas; vaina tubular, ancipitosa, 5-22 x 3 mm; lámina elíptica-oblonga a lanceolada, obtusa, diminutamente bilobada y apiculada, subcoriácea, margen entero, 2.5-6.5 x 0.3-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, generalmente paniculada, (raramente racemosa en tallos jóvenes), pluriflora, laxa, erecta, 7.5-12 cm de largo; pedúnculo ancipitoso, bialado, 2.5-3 cm de largo; provisto de 1 a 2 brácteas ancipitosas, tubulares, agudas, 12-15 mm de largo; raquis lateralmente aplanado, ancipitoso, flexuoso. **Brácteas florales** pequeñas, de la mitad del largo del ovario, deltoides, agudas, conduplicadas, ancipitosas, amplexicaules, 2 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 4-10 mm de largo. **Flores** [6]12-35, 5-14 por racimo, pequeñas, simultáneas, no resupinadas, tépalos verdes, labelo blanco, los callos amarillos; sin datos de fragancia. **Sépalos** entreabiertos, libres, cóncavos, carnosos, ápice agudo, con un apículo diminuto, 3-nervados, las nervaduras muy marcadas, margen entero, ligeramente involuto, 2.5-4 x 1.5-2.5 mm; el **dorsal** lanceolado ovado; los **laterales** ovados, oblicuos. **Pétalos** entreabiertos, libres, lineares, obtusos o agudos, 1-nervados, margen entero, 1.5-3.3 x 0.08 mm. **Labelo** unido a la columna, entero, conduplicado, triangular-lanceolado, acuminado, arqueado en posición natural, carnoso, margen entero, 2-3.7 x 1-2.6 mm; bicalloso y desprovisto de quillas. **Columna** recta, gruesa, corta, el ápice con los lados laterales dentados, 1.6-2 mm de largo. **Clinandrio** reducido, margen dentado. **Antera** 2-locular, ovoide. **Polinios** 2, subobovoides, lateralmente comprimidos; caudículas 2, laminares, duras. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** angostamente elípsoide; pedicelo 5 mm de largo; cuerpo 7 x 2 mm; cuello apical 2 mm de largo, con el perianto persistente.

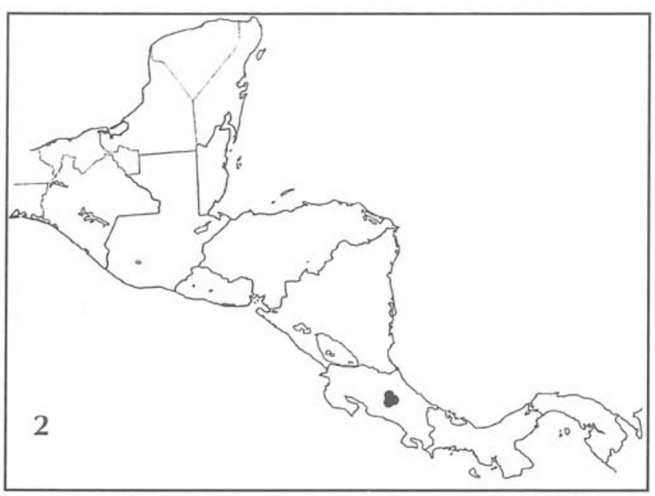
Epiphytic, sympodial, scandent **herb. Roots** produced from the basal internodes of each stem, filiform, thin. **Stems** simple, produced from the intermediate internodes of the previous stem, cane-like, basally terete, laterally compressed above, ancipitose, thin, erect, straight; basally covered by non-foliaceous, tubular sheaths. **Leaves** 1-4, distributed throughout the apical half of the stems, alternate, articulate, erect-spreading; sheath tubular, ancipitose; blade elliptic-oblong to lanceolate, obtuse, minutely bilobed and apiculate, subcoriaceous, margin entire. **Inflorescence** apical, flowering only once, generally paniculate (rarely racemose in young plants), many, lax-flowered, erect; peduncle ancipitose, two-winged; provided towards the middle with 1-2 ancipitose, tubular, acute bracts; rachis laterally compressed, ancipitose, flexuous. **Floral bracts** small, half as long as the ovary, deltoid, acute, conduplicate, ancipitose. **Ovary** terete, thin, not inflated, smooth. **Flowers** [6]12-35, 5-14 per raceme, small, simultaneous, non-resupinate, tepals green, lip white, callus yellow. **Sepals** spreading, free, fleshy, concave, apex acute, with a minute apicule, 3-veined, the veined pronounced, margin entire, slightly involute; the dorsal sepal lanceolate-ovate; lateral sepals oblique, ovate. **Petals** partly spreading, free, linear, obtuse to acute, 1-veined, margin entire. **Lip** united to the column, entire, conduplicate, triangular-lanceolate, acute, arched in natural position, fleshy, margin entire; bicallose. **Column** straight, thick, short, the apex with lateral side dentate. **Clinandrium-hood** reduced, margin dentate. **Anther** 2-celled, ovoid. **Pollinia** 2, subobovoid, laterally compressed; caudicles 2, laminar, hard. **Rostellum** apical, slit. **Capsule** narrowly ellipsoid; pedicel 5 mm long, body 7 x 2 mm, apical neck 2 mm long, perianth persistent.

OTHER SPECIMENS: COSTA RICA: Cartago: South of El Empalme, 2200-2400 m, 9 VIII 1971, *Burger 7922*, CR! F! MO! (Illustration voucher). El Empalme, La Estrella, 26 III 1924, *Standley 39438*, US!

OTHER RECORDS: COSTA RICA: Cartago: El Empalme, *Sáenz s.n.* sub *R. L. Rodríguez 160*, xerox copy of illustration, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to the western end of the Cordillera de Talamanca, in central Costa Rica, epiphytic, at 1600-2400 m altitude. Flowering from March to August.

RECOGNITION: *Epidendrum nervosiflorum* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, usually non-resupinate, distichous flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized by the generally paniculate inflorescence, small flowers (sepals <4 mm long), green with a white, entire, bicallose lip, and 2 pollinia; it is endemic from the western end of the Cordillera de Talamanca in central Costa Rica. It is somewhat similar to *Epidendrum anoglossum* Schltr. which has a racemose inflorescence with larger, greenish-yellow flowers (sepals 6-10 mm long), an ecallose lip, 4 pollinia, and widely distributed in Costa Rica and the province of Chiriquí in western Panama. *Epidendrum cymbiglossum* Hágsater, endemic from the province of Chiriquí, also has a racemose inflorescence, large, yellow flowers (sepals 14.5-17.5 mm long), and an ecallose lip, and 4 pollinia.

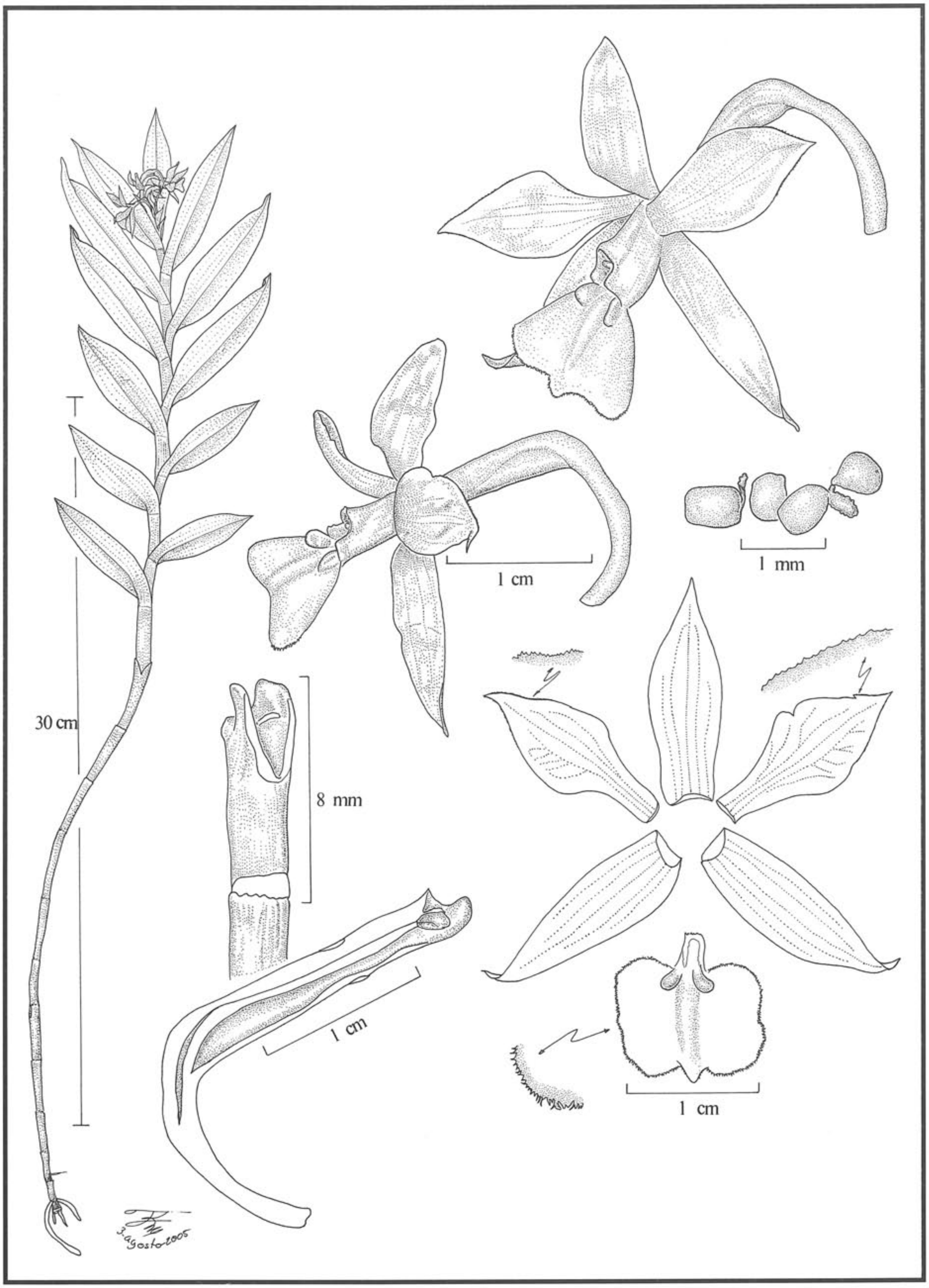


CONSERVATION STATUS: DD. Data deficient. Apparently rare and highly endemic.

ETYMOLOGY: From the Latin *nervosus*, full of fibers, nerves, and *flos*, flowers in reference to the prominent veins of the sepals and petals in the dried specimens.

REFERENCES: Dressler, R. L., 1981, **El género Neowilliamsia** Garay, Orquídea (Mexico City) 8(1): 27-36. Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 84.

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EPIDENDRUM NOTABILE Schltr.

Plate 965

EPIDENDRUM NOTABILE Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 121. 1923.

Type: COSTA RICA: La Palma, 1400 m ü. M., blühend im März 1910, ***A.* u *C. Brade 1280.*** Holotype: B (destroyed); Lectotype [here designated]: tracing of illustration prepared from the holotype, AMES 31582!

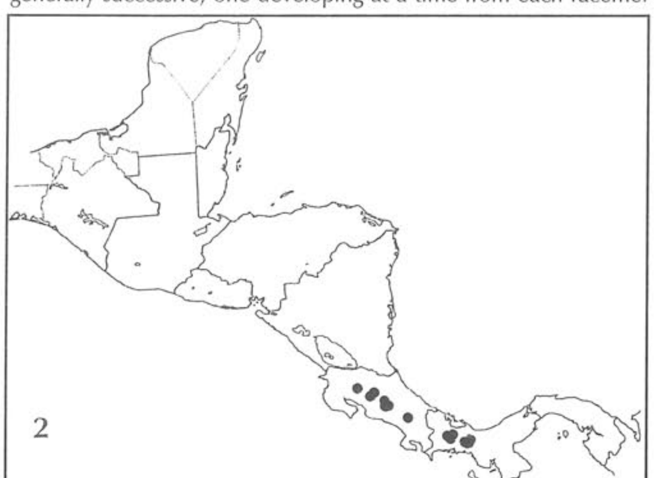
Hierba epífita o terrestre, simpodial, cespitosa, 43-200 cm de alto. **Raíces** basales, escasas, carnosas, delgadas, blancas, 0.4-1.4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base a lateralmente aplanados y ancipitosos hacia el ápice, erectos, rectos, 40-195 x 0.2-1.1 cm; ocasionalmente produciendo kekies (de las inflorescencias laterales viejas), 20-30 x 0.15-0.2 cm. **Hojas** numerosas, distribuidas a todo lo largo del tallo, alternas, articuladas, las de la mitad inferior generalmente caedizas, desiguales en tamaño; vainas tubulares, lateralmente aplanadas, ancipitosas, estriadas, fibrosas con el tiempo, 8-65 mm de largo; lámina elíptica a angostamente elíptica, acuminada, subcoriácea, margen extendido y entero, 6.2-16 x 1.1-5 cm. **Bráctea espatácea** ausente. **Inflorescencias** apicales y laterales, relativamente cortas, 1-4 [5.5] cm de largo, racemosas, paucifloras, floreciendo con nuevos racimos del mismo pedúnculo durante varias temporadas; pedúnculo corto, 0.7-1 cm de largo, totalmente cubierto por brácteas imbricadas, angostamente triangulares y acuminadas en la inflorescencia apical, 24-35 mm de largo; en las inflorescencias laterales las brácteas que lo cubren son cortas, tubulares y redondeadas, algo infladas sin llegar a ser infundibuliformes, 3-9 mm de largo. **Brácteas florales** más cortas a más largas que el ovario, angostamente triangulares, acuminadas, abrazadoras, conduplicadas, 4-23 mm de largo. **Flores** 2-3 por racimo, simultáneas (generalmente 1 presente en botón floral), resupinadas, de color crema, blancas a blanco verdosas; fragancia a pepino. **Ovario** terete, delgado, generalmente arqueado cerca de la mitad, algo dilatado en el ápice, liso, 18-35 mm de largo. **Sépalos** extendidos a reflexos, libres, angostamente elípticos, acuminados, 3-5-nervados, margen entero, extendido, [13] 15-17 x [3.4] 4-5.5 mm; los **laterales** algo oblícuos. **Pétalos** extendidos a reflexos, libres, elípticos, acuminados, 3-nervados, margen diminutamente denticulado hacia la mitad apical, 3-nervados, [11.5] 13-15 x 4-6.3 mm. **Labelo** unido a la columna, entero, subcuadrado, ligeramente panduriforme, en la base levemente cordado, ápice ligeramente retuso, mucronado, margen extendido, diminutamente serrulado-ciliado, 7-9 x 7-10 mm; bicalloso, callos laminares, algo aplanados lateralmente; unicarinado, la carina engrosada y carnosa, prolongándose hasta el ápice de la lámina. **Columna** recta, delgada, 5-7 mm de largo; el ápice ligeramente arqueado hacia arriba, con un par de lóbulos laterales, carnosos, laminares, subcuadrados y truncados. **Clinandrio** corto, margen entero. **Antera** reniforme, bidentada en el ápice, 4-locular. **Polinios** 4, obovoides, el par interior algo más pequeño; caudículas tan largas como los polinios, suaves y granulosas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ½ del ovario, delgado, algo dilatado en la base, liso. **Cápsula** elipsoide, con quillas verticales, altas; cuerpo 20-25 x 8.5-13 mm; pedicelo delgado, terete, 9-11.3 mm de largo; cuello apical 8-11.3 mm de largo.

Epiphytic or terrestrial, sympodial, caespitose **herb. Roots** basal, scarce, fleshy, thin. **Stems** simple, cane-like, terete at the base to laterally compressed and ancipitose towards the apex, erect, straight, occasionally producing keikis from the old lateral inflorescences. **Leaves** numerous, distributed throughout the stem, alternate, articulate, those of the lower half of the stem generally deciduous, unequal in size; sheaths tubular, laterally compressed, ancipitose, striated, fibrous with time; blade elliptic to narrowly elliptic, acuminate, subcoriaceous, margin spreading, entire. **Inflorescences** apical and lateral, relatively short, racemose, few-flowered, producing new racemes from the same peduncle over several growing seasons; peduncle short, totally covered by imbricating bracts, those of the apical inflorescence narrowly triangular, acuminate, 24-35 mm long, those of the lateral inflorescences short, 3-9 mm long, tubular, rounded, somewhat inflated. **Floral bracts** shorter to longer than the ovary, narrowly triangular, acuminate, conduplicate, 4-23 mm long. **Flowers** 2-3 per raceme, simultaneous (generally with 1 floral bud present), resupinate, cream-colored, white or greenish white; fragrant of cucumber. **Ovary** terete, thin, generally arching near the apex, somewhat dilated towards the apex, smooth. **Sepals** spreading to reflexed, free, narrowly elliptic, acuminate, 3-5 veined, margin entire, spreading; the lateral sepals somewhat oblique. **Petals** spreading to reflexed, free, elliptic, acuminate, 3-veined, margin minutely denticulate towards the apical half, 3-veined. **Lip** united to the column, entire, subquadrate, slightly pandurate, the base slightly cordate, apex widely and somewhat retuse, mucronate, margin spreading, minutely ciliate-serrulate; bicallose, calli laminar, somewhat laterally flattened; 1-carinate, the keel thickened and fleshy, prolonged into the apical mucro. **Column** straight, thin, the apex slightly arching upwards, with a pair of lateral, fleshy, laminar, subquadrate, truncate lobes. **Clinandrium-hood** short, margin entire. **Anther** reniform, apex bidentate, 4-celled. **Pollinia** 4, obovoid, the inner pair somewhat smaller; caudicles as long as the pollinia, soft and granulose. **Rostellum** subapical, slit. **Nectary** penetrating ½ of the ovary, thin, somewhat dilated at the base, smooth. **Capsule** ellipsoid, pedicel thin, about half as long as the body, apical neck as long as the pedicel.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Costa Rica and western Panama. Epiphyte or terrestrial, in premontane wet forest, montane wet forest and cloud forest, from 1400 to 1800 [2200] m altitude. Flowering probably throughout the year.

RECOGNITION: *Epidendrum notabile* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence with more or less imbricating bracts on the peduncle, and conduplicate, imbricating floral bracts producing one flower at a time, and the Albertii Subgroup, which has apical and more commonly short, lateral inflorescences, with several progressively longer, imbricating bracts covering the short peduncle; the flowers are membranaceous, delicate, generally successive, one developing at a time from each raceme. The species can be recognized by the inflorescence with simultaneous greenish white to cream-colored flowers, the sepals [13] 15-17 mm long, the petals elliptic with the margin denticulate towards the apex, and the subcuadrate, slightly pandurate lip, with the margin minutely ciliate-serrulate. It is similar to *Epidendrum ingramii* Hágsater & García-Cruz which is easily distinguished by the large flowers (sepals 21-25 mm long), linear-lanceolate petals with the margin entire, and the narrowly cordiform, acuminate lip. *Epidendrum ellipsophyllum* L.O. Williams is similar vegetatively, but only has an apical, elongate inflorescence (6-20 cm long), subacute floral bracts, pale green, successive flowers, sepals 10-13 mm long, the ecallose lip slightly 3-lobed, the general outline ovate-orbicular.



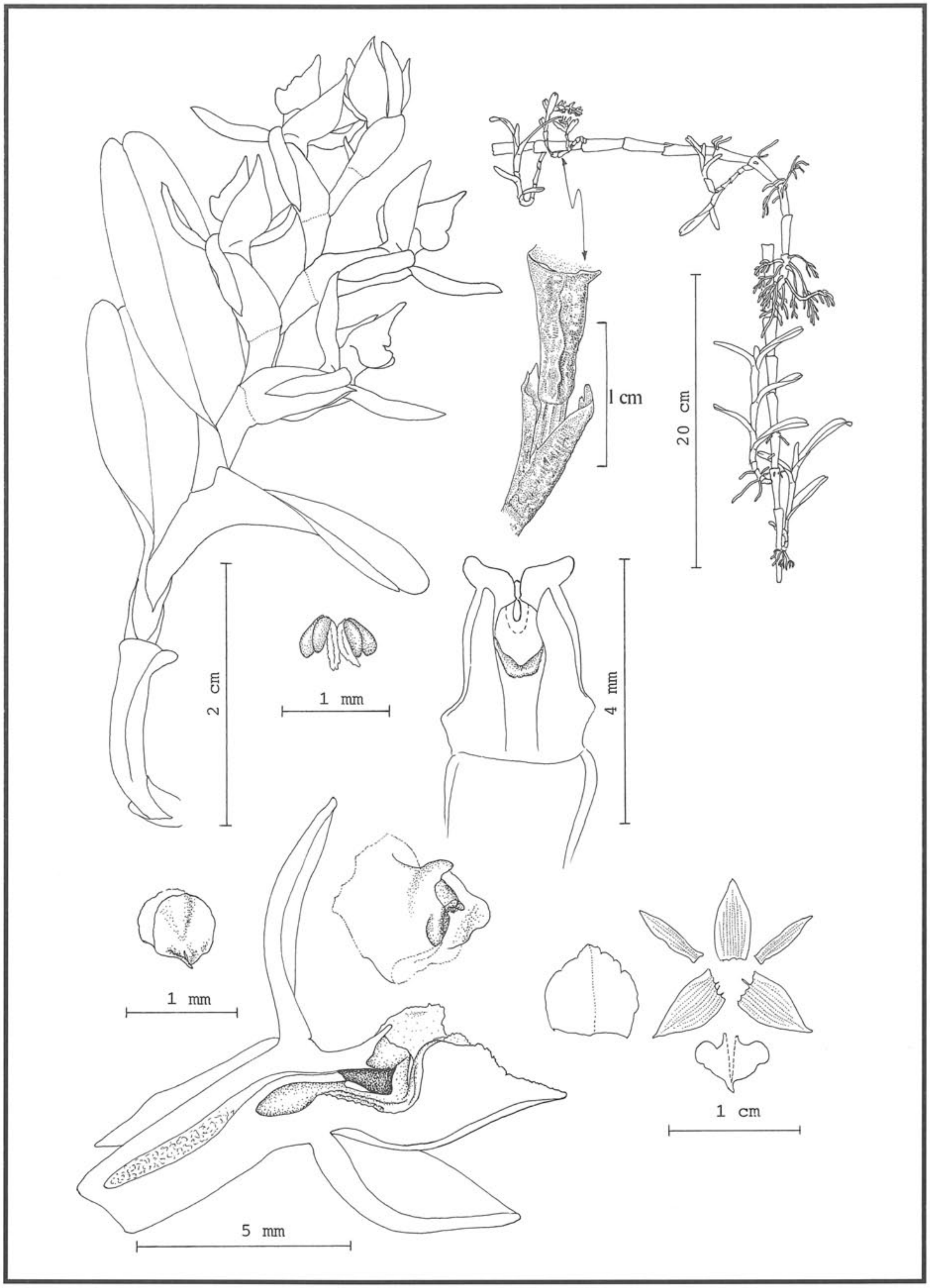
CONSERVATION STATUS: DD. Data deficient.

ETIMOLOGY: From the Latin *notabilis*, noteworthy, remarkable, due to the apical and lateral inflorescences, and the fact that the author could not place the species in any particular group within the genus.

REFERENCES: Hágsater, E., J. García-Cruz & L. Sánchez Saldaña, *Epidendrum* in Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Missouri Botanical Garden, 3: 145.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM NUTANTIRHACHIS Ames & C.Schweinf.

Plate 966

EPIDENDRUM NUTANTIRHACHIS Ames & C.Schweinf., Schedul. Orchid. 10: 69. 1930.

Type: COSTA RICA: [San José:] Three miles Northeast of El Copey, 7000 ft, 18 April 1937, ***Harvey E. Stork 1603***. Holotype: AMES 35588!

Hierba epífita, monopodial, ramificada, 40-75 cm de alto. **Raíces** basales y en ocasiones de los nodos, filiformes a delgadas, 0.5-1.3 mm. **Tallos** ramificados, tipo caña, teretes, cubiertos por vainas ligeramente rugosas, el tallo principal ca. 75 x 0.6-0.9 cm, frecuentemente de color amarillo; tallos secundarios ca. 60 x 0.3-0.6 cm; los tallos florales cortos, producidos del tallo principal, de los tallos secundarios y de los nodos subapicales de ramificaciones florales anteriores, 2-6 x 0.1-0.4 cm. **Hojas** numerosas en los tallos principal y secundarios, 2-5 en los tallos florales, caedizas en el tallo principal, presentes a lo largo de las ramas; vaina foliar tubular, rugosa, 1-5 cm de largo; láminas articuladas, ligulado elípticas, oblicuamente bilobadas, coriáceas, ligeramente rugosas, las del tallo principal más grandes 9.5 x 2 cm, las de los tallos secundarios 3.2-9.3 x 0.7-1.0 cm, las de los tallos florales 1.7-5.1 x 0.3-0.7[1.1] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, de las ramificaciones secundarias y florales, racemosa, dística, erecta a arqueada, 2-3 cm de largo; pedúnculo muy corto, rígido, recto, grueso, terete; el raquis en zigzag. **Brácteas florales** conduplicadas, no imbricadas, igual a ligeramente más largas que los ovarios, ovadas, agudas, 3-7 mm de largo. **Flores** 2-6, simultáneas, no resupinadas, amarillo verdoso a crema verdoso, fragantes por la noche y mañana. **Ovario** terete, grueso, no inflado, liso, 3-6 mm de largo. **Sépalos** extendidos, glabros libres, lanceolado ovados, acuminados, 7-9 nervados, margen entero, extendido, 6-11 x 2.5-4 mm; los laterales oblicuos. **Pétalos** glabros, libres, abruptamente reflexos en la base, linear lanceolados, agudos, 3-nervados, con dos nervaduras secundarias pareciendo ser 5-nervados, margen entero, extendido, 5.5-8 x 1-2.3 mm. **Labelo** unido a la columna, abrazando la columna en posición natural sin cubrirla, entero, ampliamente triangular a triangular cordiforme, agudo, margen irregularmente eroso, 4-8 × 2-7 mm; callo carnoso, tridentado, prolongándose en una carina central también carnosa y alta, la cual se rompe al extender el labelo. **Columna** recta, ca. 2 mm, el ápice dilatado, con un diente paralelo a arqueado hacia arriba y dos procesos laterales, laminares y carnosos. **Clinandrio** corto, formando un diente paralelo a la columna, cónico. **Antera** subesférica, con dos protuberancias petaloides, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, de 1/3 de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario, liso. **Cápsula** no vista.

Epiphytic, monopodial, branching **herb. Roots** basal, occasionally from the nodes, filiform to thin. **Stems** branching, terete, cane-like, covered by somewhat rugose sheaths; the main stem tall, the secondary stems nearly as long but thinner, the flowering branches short, produced from the main, secondary and subapical nodes of previous flowering branches. **Leaves** many on the main and secondary stems, 2-5 on the floral branches, those of the main stem deciduous; foliar sheaths tubular, rugose; blade spreading, articulate, ligulate-elliptic, obliquely bilobed, coriaceous, slightly rugose, those of the main stem large, those of the secondary stems smaller, those of the flowering stems unequal, generally much smaller. **Inflorescence** apical, from the secondary and flowering branches, racemose, distichous, erect to arching; peduncle short, rigid, straight, thick, terete; rachis zigzag. **Floral bracts** conduplicate, not imbricating, of equal length or slightly longer than the ovary, ovate, acute. **Flowers** 2-6, simultaneous, non-resupinate, greenish yellow to greenish cream-colored, fragrant at night and in the morning. **Ovary** terete, short, thick, smooth. **Sepals** spreading, glabrous, free, lanceolate-ovate, acuminate, 7-9 veined, margin entire, spreading. **Petals** glabrous, free, abruptly reflexed at the base, linear-lanceolate, acute, 3-veined, with two secondary veins and thus appearing 5-veined, margin entire, spreading. **Lip** united to the column, embracing the column in natural position without covering it, entire, widely triangular to triangular-cordiform, acute, margin irregularly erose; callus fleshy, tridentate, prolonged into a high, fleshy central keel which tears when flattening the lip. **Column** straight, the apex somewhat funnel-shaped and flattened with a dorsal tooth and lateral, fleshy laminar processes. **Clinandrium-hood** short, forming a tooth parallel to the column. **Anther** sub spherical, with a pair of short, triangular, petaloid endings. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium translucent. **Rostellum** apical, slit. **Nectary** penetrating ¼ of the ovary, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from the Cordillera de Tilarán (Monteverde), the Cerro de la Muerte in central Costa Rica to western Panama, epiphytic in pluvial cloud and oak forest, at 1400 to 3200 m altitude. Flowering from March to October.

RECOGNITION: *Epidendrum nutantirhachis* Ames & C.Schweinf. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by the robust, terete stem with somewhat rugose leaf sheaths, ligulate-elliptic leaves, erect to arching, rigid, distichous inflorescence with 2-6 flowers, and zigzag rachis, the floral bracts not imbricating, of equal length or slightly longer than the ovary, lip widely triangular to triangular-cordiform, the callus fleshy, tridentate, prolonged into a very high, fleshy keel, the column with a parallel dorsal tooth and a pair of lateral fleshy, flattened processes. It is similar to *Epidendrum orthodontum* Hágsater & L.Sánchez which has larger flowers, sepals 9-12 mm long, the lip 8-9 mm long, the lip 3-lobed with the midlobe triangular. *Epidendrum chirripoënse* Hágsater has laterally compressed stems, a triangular, ecallose lip, with a smooth disc, and the column apically unornamented.

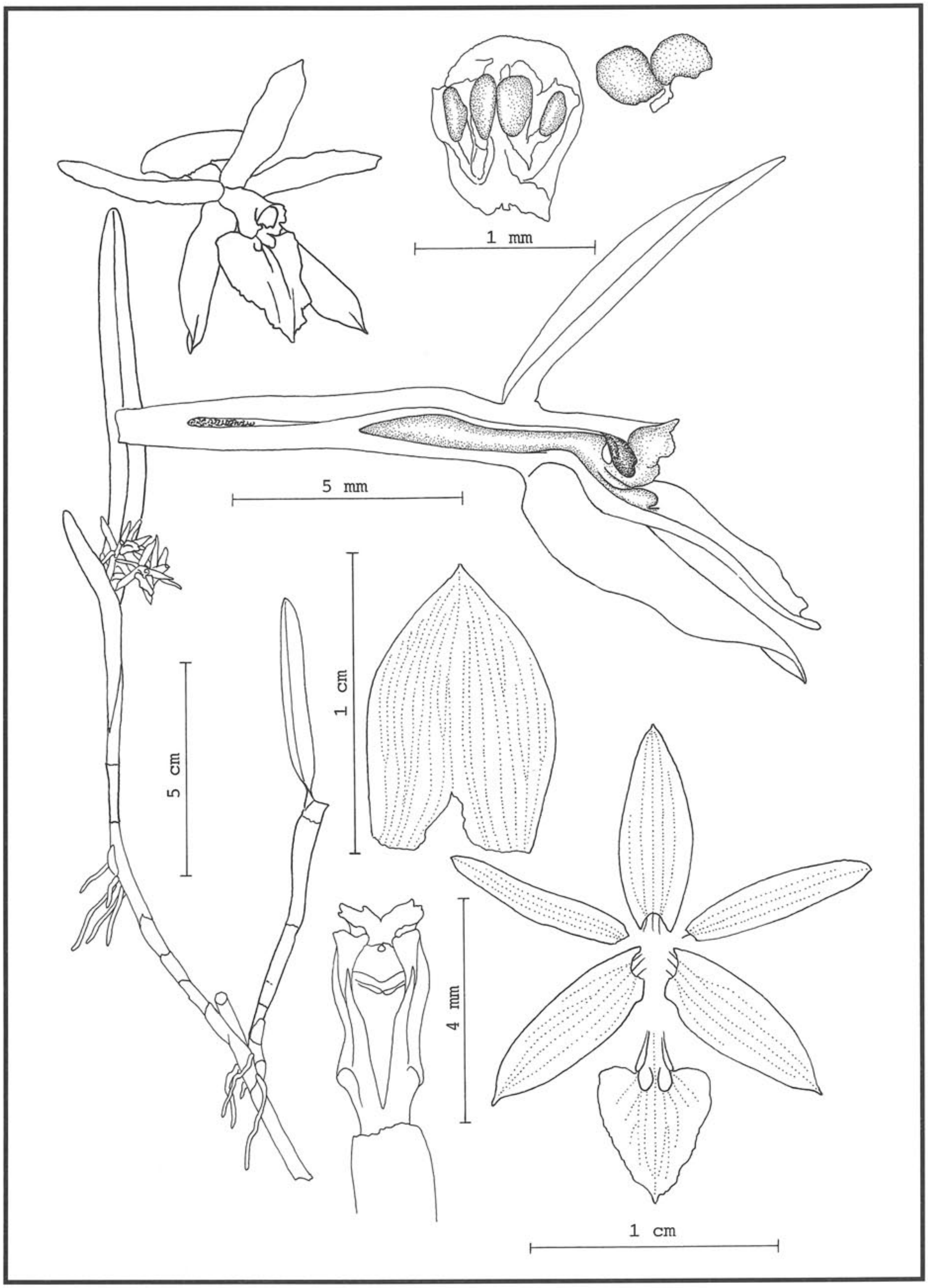


CONSERVATION STATUS: DD.: Data deficient.

ETYMOLOGY: From the Latin *nutans*, nodding, and *rhachis*, axis of the inflorescence, in reference to the nodding inflorescence. In reality, and clearly visible in the holotype, the inflorescence is erect to arching, but not nodding or drooping, as on some closely related species. The name is thus misleading.

REFERENCES: Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Vol. III, Missouri Botanical Garden, p. 146.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM OCTOMERIOIDES Schltr.

Plate 967

EPIDENDRUM OCTOMERIOIDES Schltr., Repert. Spec. Nov. Regni Veg. 3: 248. 1907.

Type: COSTA RICA: [Cartago:] In Wäldern bei Taus, 650 m, November 1897, ***A. Tonduz 11378.*** Holotype: B, destroyed; tracing at AMES! Isotype: BR!

Hierba epífita, simpodial, rastrera, de crecimiento sucesivo lateral; 15 cm de alto. **Raíces** distribuidas a lo largo de los entrenudos basales, escasas, carnosas, delgadas, blancas; 0.3-1 mm de grosor. **Tallos** sencillos, tipo caña, delgados en la base y ligeramente más anchos cerca del ápice, teretes abajo y lateralmente aplanados arriba, rectos, algo espaciados entre sí; 5-14 x 0.2-0.5 cm; cubiertos totalmente por vainas tubulares, agudas, algo infladas en el ápice, finamente estriadas, escariosas, no foliosas; 4-44 x 2.5-5 mm. **Hojas** 1-2, agregadas en el ápice del tallo, articuladas, subsésiles, conduplicadas en la base, erectas; vainas tubulares, lateralmente comprimidas, cortas; 2-7 mm de largo; lámina linear oblonga a linear lanceolada, obtusa, desigualmente bilobada, crasa, coriácea, margen entero, extendido, en seco ocasionalmente revoluto; 3.5-13 x 0.6-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, pauciflora, corta, nutante, florece una sola vez; 1.5-2 cm de largo; pedúnculo muy corto, oculto en su totalidad por 1 bráctea semejante a las florales, la bráctea ovada, aguda, conduplicada, amplexicaule, escariosa; 10-13 mm de largo; raquis, terete, delgado, ligeramente flexuoso, oculto casi en su totalidad por las brácteas florales. **Brácteas florales** más largas que el ovario, ovadas, agudas, apiculadas, conduplicadas, glumáceas, margen entero, 7-10 mm de largo. **Flores** 3-7, simultáneas, resupinadas, blancas a muy raramente blanco verdosas; fragancia dulce, intensa. **Ovario** terete, delgado, no inflado, no ornamentado; 5-10 mm de largo. **Sépalos** extendidos, libres, glabros, membranáceos, oblongo elípticos, agudos, diminutamente apiculados, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido y entero; 7.5-10 x 2.5-3.0 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, libres, glabros, membranáceos, linear elípticos, obtusos, 3-nervados, margen extendido, entero; 7-8 x 1.5-2.0 mm. **Labelo** unido a la columna, entero, triangular cordiforme, base truncada a profundamente cordada, ápice agudo a redondeado, con un apículo, margen finamente eroso, extendido; 5.0-5.5 x 4.0-5.0 mm; bicalloso, callos pequeños, delgados; disco con 3 quillas muy bajas, la central alargada cerca del ápice de la lámina, las laterales más cortas. **Columna** recta a ligeramente arqueada, delgada; 3-4.5 mm de largo. **Clinandrio** corto, forma de embudo corto, margen eroso-dentado. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales, el par exterior más pequeño; caudículas suaves y granulosas, más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, delgado, no inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial repent herb, of successive lateral growth. **Roots** distributed along the basal internodes, scarce, fleshy, thin, white. **Stems** simple, cane-like, thin at the base, somewhat thicker near the apex, terete below, laterally compressed above, straight, somewhat spaced; totally covered by acute, tubular sheaths, somewhat inflated at the apex, minutely striated, scarious. **Leaves** 1-2, aggregated at the apex of the stem, articulate, subsessile, erect; sheaths tubular, laterally compressed, short; blade linear oblong to linear-lanceolate, obtuse, unequally bilobed, thickened-coriaceous, margin entire, spreading, occasionally revolute when dry. **Inflorescence** apical, racemose, few-flowered, short, nutant, flowering only once; peduncle very short, totally hidden within a single bract, similar to the floral bracts, ovate, acute, conduplicate, amplexicaul, scarious; rachis terete, thin, slightly flexuous, nearly totally hidden by the floral bracts. **Floral bracts** longer than the ovary, ovate, acute, apiculate, conduplicate, glumaceous, margin entire. **Flowers** 3-7, simultaneous, resupinate, white to rarely greenish white; fragrance sweet, intense. **Ovary** terete, thin, smooth. **Sepals** spreading, free, glabrous, membranaceous, oblong-elliptic, acute, minutely apiculate, 3-veined, the lateral veins bifurcate from the base so as to appear 5-veined, margin spreading, entire; the lateral sepals slightly oblique. **Petals** spreading, free, glabrous, membranaceous, linear elliptic, obtuse, 3-veined, margin spreading, entire. **Lip** united to the column, entire, triangular-cordiform, base truncate to deeply cordate, apex acute to rounded with an apicule, margin minutely erose, spreading, bicallose, the calli small, thin, disc with 3, low keels, the central keel elongate to near the apex of the blade, the lateral keels short. **Column** straight to slightly arched, thin. **Clinandrium hood** short, funnel-shaped, margin erose-dentate. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal, the outer pair somewhat smaller; caudicles soft and granulose, longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, thin, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread from Honduras to the Chocó in Colombia at lower and middle altitudes, from sea level to 1700 m. Flowering October to January, in cultivation and rarely in nature from February to April.

RECOGNITION: *Epidendrum octomerioides* belongs to the Polychlamys Group, which is characterized by the successive lateral growths, few leaves aggregate towards the apex of the stems, the distichous, apical inflorescence with prominent, conduplicate, acute, floral bracts, and the Octomerioides Subgroup which has slightly thickened stems, rigid, fleshy-thickened, linear-oblong or linear-lanceolate leaves, the apex unequally bilobed. The species is distinguished by the slightly thickened stems, 1-2, apical, linear-oblong or linear-lanceolate, suberect, very fleshy-thickened leaves, and the white (rarely greenish white) flowers, the sepals 7.5-10 mm long, and the triangular-cordiform lip with two very small calli. *Epidendrum neoporpax* (Rchb.f.) Ames, from Cuba and Hispaniola has smaller plants, with 2-4, short, narrow leaves (1.6-8.5 x 0.4-1.2 cm), white to greenish yellow flowers, sepals 6-7 mm long, the lip ovate-cordate and the ovary inflated without forming a vesicle.

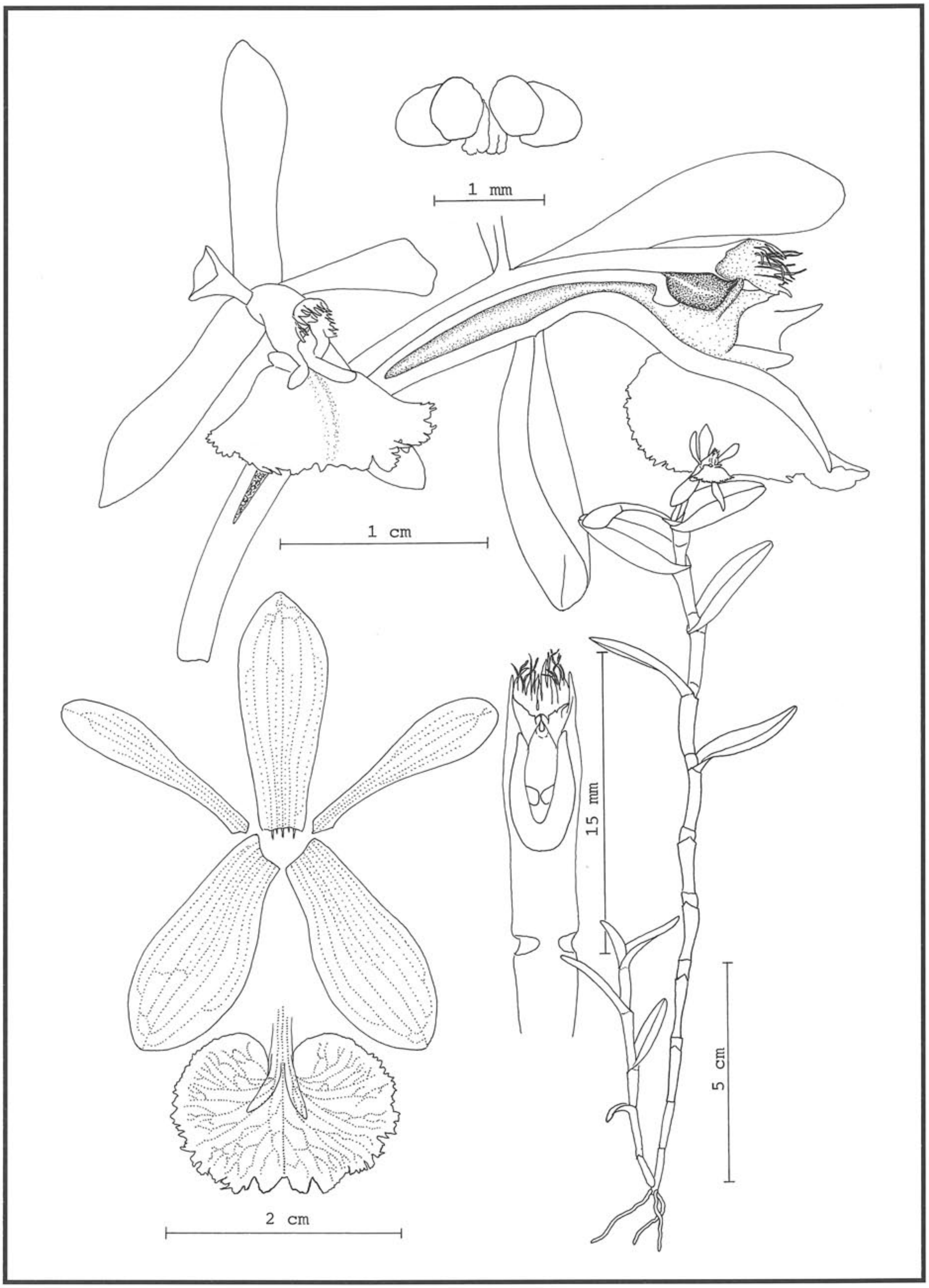


CONSERVATION STATUS: DD. Data deficient. The species is apparently common in Costa Rica.

ETYMOLOGY: Probably in reference to the thin stem with the erect, fleshy-thickened, oblong, leaf at the base of which are the bunched flowers and bracts, which recall the genus *Octomeria*.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM ODONTOCHILUM Hágsater **Plate 968**

EPIDENDRUM ODONTOCHILUM Hágsater, Orquídea (Mexico City). 11: 30-31, fig. p. 38, 1989.

Type: COSTA RICA: Vertiente Atlántica, Río Purisil, 1350 m, 12 diciembre 1982, ***Clarence Kl. Horich sub Eric Hágsater 6933.*** Holotype: AMO! (Illustration voucher). Isotype: CR! Clonotypes: 27 junio 1983, MO! 13 agosto 1986, AMO!

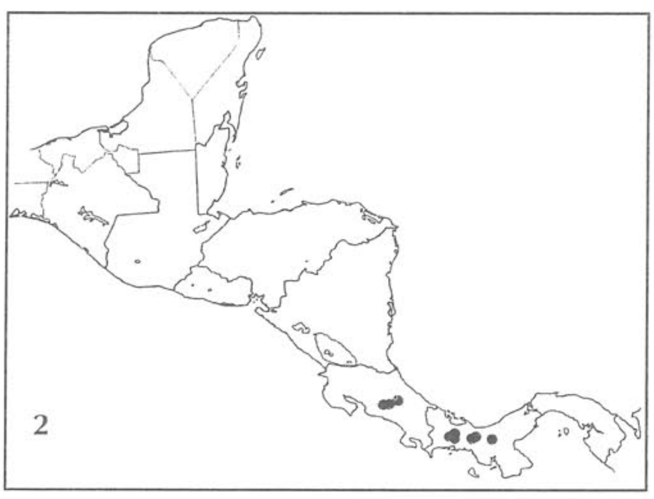
Hierba epífita, simpodial, cespitosa, 15-35 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, flexuosos, 13-30 x 0.2-0.3 cm. **Hojas** 5-11, distribuidas a lo largo del tallo; vaina foliar lateralmente comprimida, lisa, 1.5-2.2 cm de largo; lámina angostamente elíptica a lanceolada, ápice redondeado, desigualmente bilobado, subcoriácea, márgen entero, verde con venación contrastante verde pálido, visible hasta en material seco, 4-11 x 0.8-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical en el tallo maduro, florece una sola vez, subcorimbosa, pedúnculo inconspicuo. **Bráctea floral** mucho más corta que el ovario, triangular ovada, aguda, 2-5 x 1.7-2 mm. **Flores** 2-6, simultáneas, resupinadas, de color verde muy pálido, en ocasiones el labelo casí blanco, fragancia no detectada. **Ovario** no inflado, terete, no ornamentado, 25-50 x 1-1.5 mm. **Sépalos** extendidos, libres, obovados, glabros, carnosos, 5-nervados, con nervaduras secundarias menores, margen entero, revoluto, el **dorsal** ápice obtuso, 17-20 x 5-7 mm, los **laterales** ápice redondeado, 15-17 x 6-7 mm de ancho. **Pétalos** parcialmente abiertos, obovados angostamente espatulados, ápice redondeado, membranáceos, 3-nervados, las nervaduras exteriores subdivididas hacia la parte media, margen entero, extendido, 15-18 x 3-4 mm. **Labelo** unido a la columna, trilobado, 10-13 x 15-18 mm; bicalloso, los callos largos y delgados, lámina engrosada al centro formando una quilla muy baja; lóbulos laterales semiovados, margen eroso dentado, sobre todo hacia la parte apical, 5.5-6 x 9-12 mm; lóbulo medio medio subcuadrado, retuso a hendido formando oscuramente dos lóbulos, margen entero, 1.8-2.5 x 3.8-5 mm. **Columna** recta, dilatada hacia el ápice, con un par de procesos apicales agudos, un poco más cortos que el clinandrio y que facilmente se confunden con éste, 11-13 x 1.3-1.9 mm. **Clinandrio** prominente, sobrepasa al ápice de la columna, margen profundamente fimbriado. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, algo más cortas que los polinios; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, penetrando hasta la mitad de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, flexuous. **Leaves** 5-11, distributed throughout the stem; sheath laterally compressed, smooth; blade narrowly elliptic to lanceolate, subcoriaceous, apex rounded, unequally bilobed, margin entire, spreading, deep green with light green, strongly contrasting venation, easily visible in fresh and pressed material. **Inflorescence** apical, from the mature stem, flowering only once, subcorymbose, sessile, peduncle obsolete. **Floral bracts** much shorter than the ovary, triangular-ovate, acute. **Flowers** 2-6, simultaneous, resupinate, very pale green, the lip occasionally almost white. **Ovary** not inflated, terete, smooth. **Sepals** spreading, free, obovate, obovate, glabrous, fleshy, 5-veined, with additional secondary veins, margin entire, revolute; the apical sepal obtuse, the lateral sepals apically rounded. **Petals** partly spreading, obovate, narrowly spatulate, apex rounded, membranaceous, 3-veined, the outer veins, bifid towards the middle, margin entire, spreading. **Lip** united to the column, 3-lobed; bicallose, the calli large and thin, blade thickened in the center forming a very low keel; lateral lobes semiovate, margin erose-dentate, especially towards the middle; midlobe subquadrate, retuse to emarginate, forming two obscure lobes, margin entire. **Column** straight, dilated towards the apex, with a pair of acute apical processes, slightly shorter than the clinandrium-hood, and easily confused with it. **Clinandrium-hood** prominent, surpassing the column, margin deeply fimbriate. **Anther** subspherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, slightly longer than the pollinia; viscidium viscous, translucent. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from the Atlantic slope of the Cordillera de Talamanca in central Costa Rica to central Panama, epiphytic in evergreen forests at 1000-1700 m altitude. Flowering from June to January.

RECOGNITION: *Epidendrum odontochilum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by the laterally compressed stems, the leaves with obvious, light-colored venation, 2-6, very pale green flowers, the 3-lobed lip with an erose-dentate margin, two large, thin, divergent calli, the midlobe of the lip subquadrate and forming two obscure lobes, column with a pair of lateral, narrow, acute processes, which are confused with the prominent, fimbriate clinandrium-hood. *Epidendrum storkii* Ames has the lateral lobes of the lip with entire or sinuate margins, the entire midlobe basally subquadrate and then triangular, the column lacks any apical processes.



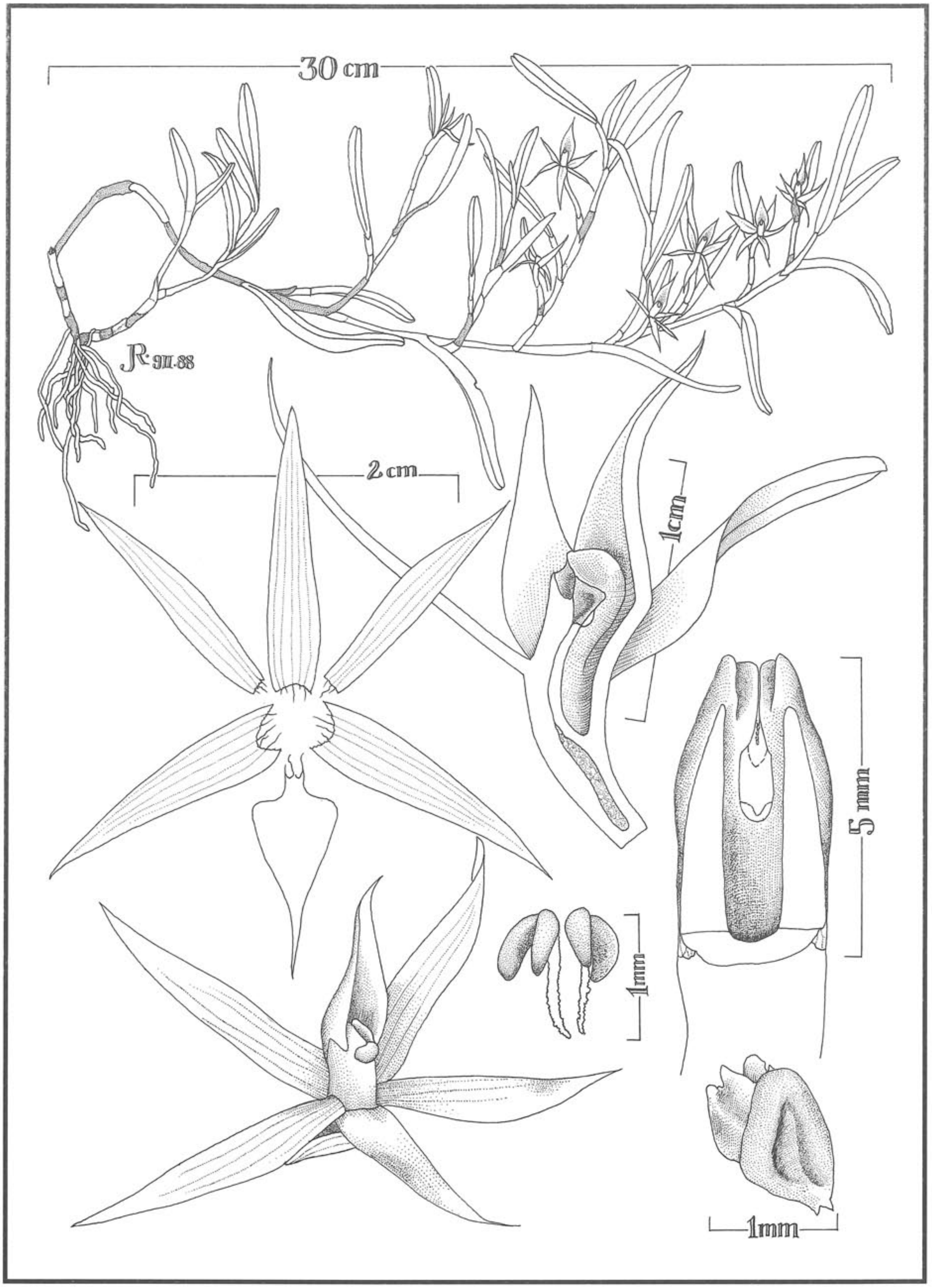
CONSERVATION STATUS: DD: Data deficient. Common in the Western Cordillera de Talamanca in Costa Rica, including protected areas.

ETYMOLOGY: From the Greek οδοντ, toothed, and χελος, labellum or lip, in reference to the toothed margin of the lip which characterizes this species.

REFERENCES: Hammel et al., 2003, **Manual de Plantas de Costa Rica** 3: 147, Missouri Botanical Garden.

Authors: L. Sánchez S. & E. Hágsater Illustrator: E. Hágsater Editors: E. Hágsater & L. Sánchez S.

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EPIDENDRUM OXYGLOSSUM Schltr. **Plate 969**

EPIDENDRUM OXYGLOSSUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 40. 1923.

Type: COSTA RICA: La Palma, im Jahre 1922, ***C. Wercklé 127.*** Holotype: B (destroyed). Isotype: Illustration AMES 31584! non *Epidendrum oxyglossum* Schltr. 1924 (= *Epidendrum dunstervillei* A. D. Hawkes)
Synonym: *Epidendrum exile* Ames, Schedul. Orchid. 4: 41. 1923. Type: COSTA RICA: Cartago: La Estrella, 9 January 1923, ***Charles H. Lankester & Alfredo Sancho 430.*** Holotype: AMES 23156! Illustration AMES 26871!

Hierba epífita, monopodial, ramificada, 18-50 cm. **Raíces** basales y en ocasiones de los nodos, filiformes a delgadas, 0.7-1.2 mm de grosor. **Tallos** ramificados, tipo caña, teretes, flexuosos, cubiertos por vainas rugosas, las vainas del tallo principal prominentemente ancipitosas; tallo principal erecto, con el tiempo reclinado a colgante, las ramas suberectas a arqueadas hacia arriba desde el tallo principal reclinado; el tallo hasta 36 x 0.4-0.6 cm, las ramas florales, más cortas, algo lateralmente comprimidas hacia el ápice, 4-9 x 2-3 cm, produciendo cadenas de nuevas ramas desde un internodo subapical. **Hojas** numerosas en el tallo principal, 2-3 en las ramificaciones florales, distribuidas en el tercio apical, vaina foliar tubular, algo lateralmente comprimida hacia el ápice, rugosa, 0.5-3.5 cm de largo; lámina articulada, angostamente oblongo elíptica, desigualmente bilobada, coriácea, las del tallo principal 3.5-11 x 0.7-1.0 cm, las de las ramas florales 2-5.5[8] x 0.3-0.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, de las ramas florales, erecta, uniflora; pedúnculo muy corto. **Bráctea floral** más larga que el ovario, conduplicada, oblonga, obtusa, 0.8-1.2 cm de largo. **Flor** 1, no resupinada, de color verde a amarillo verdoso, fragancia no registrada. **Ovario** no inflado, terete, liso, 0.7-0.8 cm de largo. **Sépalos** libres, entreabiertos, angostamente lanceolados, acuminados, glabros, 5-nervados, margen entero, extendido, 15-20 x 2-3 mm; los laterales oblicuos. **Pétalos** libres, entreabiertos, linear lanceolados, acuminados, glabros, 3-nervados, margen entero, extendido, 15-17 x 1.8-2.0 mm. **Labelo** unido a la columna, base truncada, cóncavo en posición natural, entero, triangular, largamente acuminado, 13-16 x 4.5-7 mm; ecalloso, disco con nervaduras evidentes, la central se prolonga hasta la mitad de la lámina. **Columna** recta, la entrada apical con un par de engrosamientos interiores oblicuamente transversales, 4.5-5.0 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoidea, con un pico apical corto y bífido, 4-locular. **Polinios** 4, obovados, lateralmente comprimidos; caudículas granulosas más largas que los polinios, viscidio semilíquido. **Lóbulos laterales del estigma** de 1/3 de la cavidad estigmática. **Nectario** penetrando casi 1/2 ovario, amplio, liso. **Cápsula** elipsoide, pedicelo corto, 2.0-2.5 mm de largo, cuello apical, 3.0-3.5 mm de largo, cuerpo 14-17 x 6-8 mm.

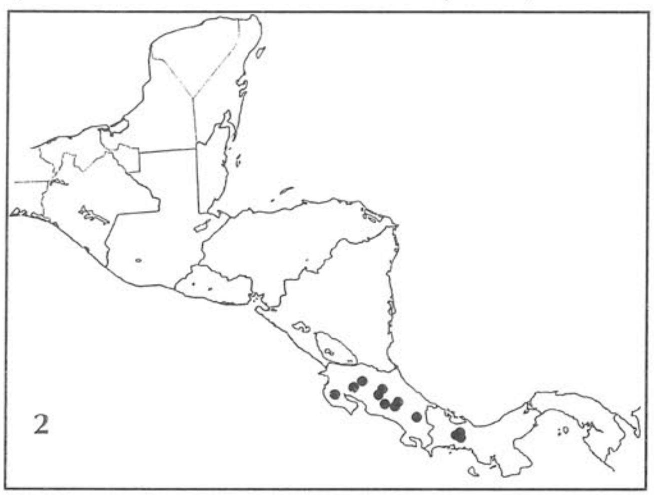
Epiphytic, monopodial, branching **herb. Roots** basal, occasionally from the nodes, filiform to thin. **Stems** branching, cane-like, terete, flexuous, covered by rugose sheaths, those of the main stem prominently ancipitose; the main stem erect, reclining to hanging with time, the branches suberect to arching upwards when the main stem is reclining or hanging, main stem long, the floral branches short, producing chains of new branches from a subapical internode. **Leaves** numerous on the main stem, 2-3 on the floral branches, distributed along the apical third; sheath tubular, laterally compressed towards the apex, rugose; blade articulate, narrowly oblong-elliptic, unequally bilobed, coriaceous, those of the main stem larger than those of the floral branches which can be much smaller. **Inflorescence** apical, from the flowering branches, erect, one-flowered, peduncle short. **Floral bract** longer than the ovary, conduplicate, oblong, obtuse. **Flower** 1, non-resupinate, green to greenish yellow. **Ovary** not inflated, terete, smooth, short. **Sepals** free, partly spreading, narrowly lanceolate, acuminate, glabrous, 5-veined, margin spreading, entire. **Petals** free, partly spreading, linear-lanceolate, acuminate, glabrous, 3-veined, margin spreading, entire. **Lip** united to the column, base truncate, concave in natural position, entire, triangular, long-acuminate; ecallose, disc with evident thickened veins, the central vein reaching the middle of the blade. **Column** straight, short, the entrance with a pair of obliquely transverse thickened ribs. **Clinandrium-hood** reduced, entire. **Anther** ovoid, with a short, bifid, apical beak, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles longer than the pollinia, granulose, viscidium semi liquid. **Nectary** penetrating nearly half of the ovary, wide, smooth. **Capsule** ellipsoid, pedicel short, apical neck short.

OTHER SPECIMENS: See appendix.

OTHER RECORDS: COSTA RICA: 11 II 1966, Illustration by *Rafael Lúcas Rodríguez*; slide, xerox AMO!

DISTRIBUTION AND ECOLOGY: Ranging along the Cordillera de Tilaran, Central, de Talamanca and Tabasará, from western Costa Rica to central Panama, along the humid Caribbean side of the summit, in rain and cloud forest, from 600 to 1600 m altitude. Flowering throughout the year, but mainly from November to January.

RECOGNITION: *Epidendrum oxyglossum* Schltr. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by the flexuous main stem with ancipitose sheaths, narrow, oblong-elliptic leaves, single flowered inflorescence, 15-20 mm long, narrowly lanceolate, acuminate sepals and the long acuminate, ecallose lip with evident thickened veins. It is somewhat similar to *Epidendrum lancilabium* Schltr. which has very narrow, semiterete leaves, 8-9 mm long sepals.

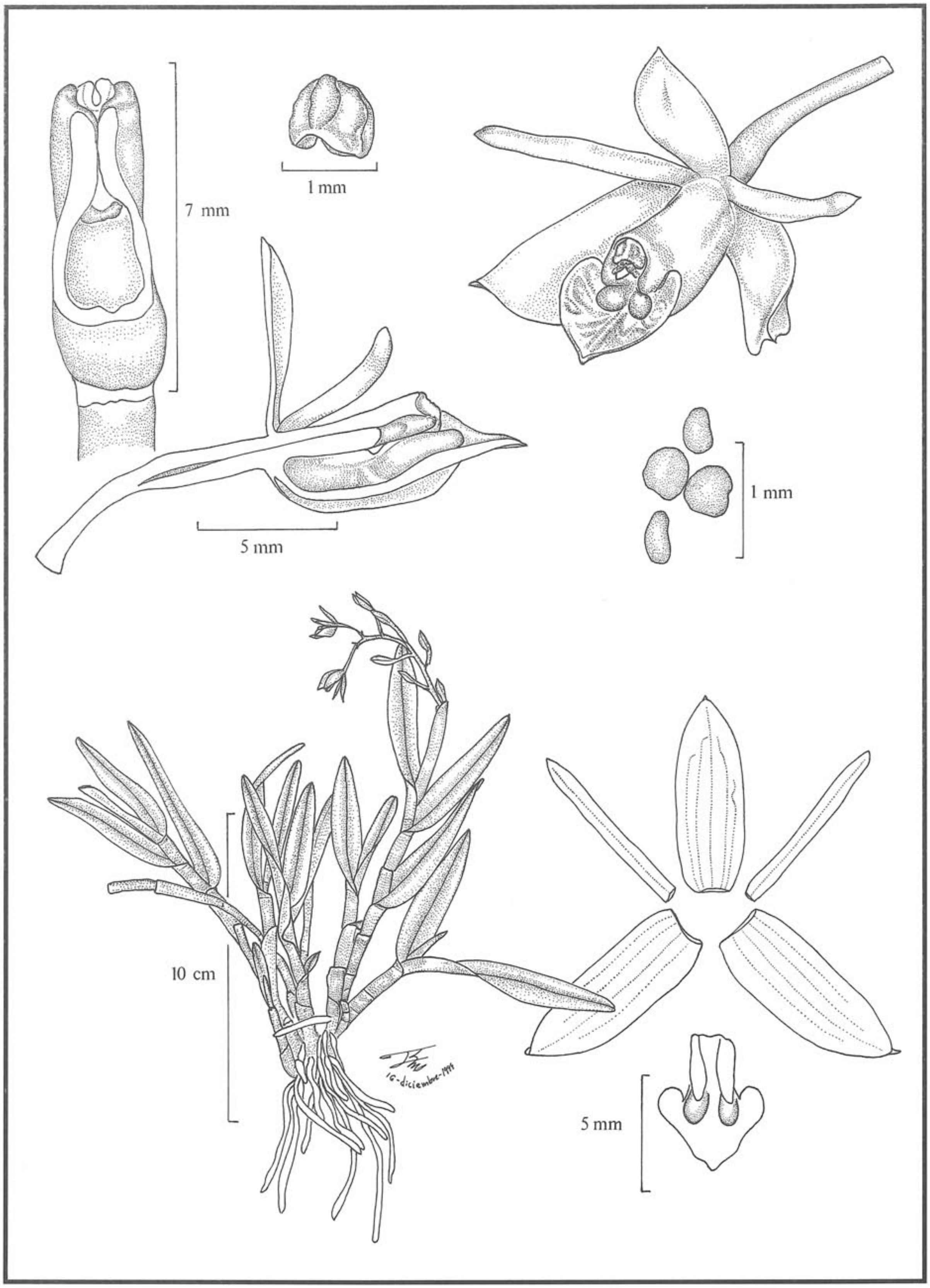


CONSERVATION STATUS: DD (Data deficient).

ETYMOLOGY: From the Greek οξυς, sharp, pointed, and γλωσσα, tongue, in reference to the long, acuminate lip. The synonym *exile* is derived from the Latin, *exilis*, small, meagre, weak, probably in relation to the size of the plant when compared to other species of *Epidendrum*.

REFERENCES: Hammel et al., 2003, **Manual de Plantas de Costa Rica** 3: 147, Missouri Botanical Garden.

Authors: L. Sánchez & E. Hágsater **Illustrator: R. Peláez** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM PACHYGASTRIUM Kraenzl. **Plate 970**

EPIDENDRUM PACHYGASTRIUM Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 183. 1905.

Type: PERU: Amazonas, Tal des Utcubamba-Flusses, südlich von Chachapoyas, 3000 m, ***Weberbauer 4298***. Holotype: B, destroyed. (photographs: AMES! F! NY!) Isotypes: AMES! G! MOL! PR!

Hierba epífita, simpodial, subcespitosa, de 14-28 cm de alto. **Raíces** basales, delgadas, carnosas, blancas de 0.5-1.5 mm de grosor. **Tallos** delgados, tipo caña, erectos, sencillos, lateralmente comprimidos, ancipitosos, 6-25 cm de largo; se producen del cuarto basal del tallo anterior, donde está cubierto por vainas no foliosas. **Hojas** 3-5, distribuidas a lo largo de los dos tercios apicales del tallo, articuladas con la vaina tubular lateralmente comprimida, lisa, estriada cuando seca, de 1.5-2.5 x 0.3-0.5 cm; lámina foliar carnosa, aplanada, angostamente elíptica a lanceolada, ápice obtuso, desigualmente bilobulado, con el margen apical crenulado, quilla dorsal apical baja, verde claro, desiguales, 3-8 x 0.6-1.0 cm. **Bráctea espatácea** tubular, lateralmente comprimida, linear oblonga, ápice redondeado, cubriendo totalmente el pedúnculo, 30-50 x 5 mm. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, arqueada, de 8.5-13 cm de largo, racemosa, pedúnculo de 3 cm de largo, comprimido, desprovisto de brácteas. **Brácteas florales** triangulares, acuminadas, mucho más cortas que el ovario, de 1.0-1.5 x 1 mm. **Ovario** pedicelado, delgado, no inflado, de sección circular, no ornamentado, de 10-12 x 1.5 mm. **Flores** 6-17, simultaneas, abriendo del ápice hacia la base del racimo, resupinadas, magenta, translúcidas, los callos blanquecinos; sin fragancia. **Sépalos** entreabiertos, angostamente oblongos, el dorsal agudo, diminutamente apiculado, 5-nervado, los laterales aristados, con una quilla prominente en el dorso cerca del ápice, 4-nervados; 8-9 x 3 mm. **Pétalos** extendidos, lineares, agudos, uninervados; 8 x 0.7 mm. **Labelo** unido a la columna, entero, cordiforme, triangular, ápice formando un ángulo recto, 3.5 x 4.5 mm, bicalloso, los callos grandes, subglobosos de alrededor de 1 mm de grosor. **Columna** recta, gruesa, formando una vesícula con la base del labelo hasta la inserción del perianto; 7 mm de largo. **Clinandrio** reducido, entero. **Rostelo** apical, hendida. **Lóbulos laterales del estigma** muy pequeños, de 1/6 del largo de la cavidad. **Antera** reniforme, 4 locular. **Polinios** 4, obovoides, algo lateralmente comprimidos. **Nectario** prominente, entre la columna y el labelo, ancho, glabro, poco profundo, sin traspasar el perianto. **Cápsula** pedicelo filiforme, 6-10 mm de largo, cuerpo ovoideo piriforme, 12 x 7 mm, cuello apical grueso, 1.5 x 1.5 mm; perianto persistente.

Epiphytic, sympodial, subcaespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, laterally compressed, ancipitose, produced from the basal fourth of the previous stem, where the stem is covered by non-foliaceous sheaths. **Leaves** 3-5, distributed throughout the apical 2/3 of the stem, unequal; sheath tubular, ancipitose, striated when dry; blade fleshy, narrowly elliptic to lanceolate, apex obtuse, unequally bilobed, margin crenulate. **Spathaceous bract** tubular, ancipitose, linear-oblong, apex rounded, covering the peduncle. **Inflorescence** apical, recemose. **Floral bracts** very short, triangular, acuminate. **Ovary** thin. **Flowers** 6-17, simultaneous, resupinate, magenta, translucent, with the calli whitish; without fragrance. **Sepals** partly spreading, narrowly oblong, short apiculate, lateral sepals aristate, 4-5-veined. **Petals** spreading, linear, acute, 1-veined. **Lip** united to the column, entire, triangular-cordiform, apex forming a right angle, bicallose, the calli large, subglobose. **Column** straight, thick. **Antera** reniform, 4-locular. **Pollinia** 4, obovoid, somewhat laterally compressed. **Nectary** prominent, formed by the junction between the column and the lip, wide, without penetrating the ovary, unornamented. **Capsule** pedicel filiform, body ovoid-pyriform, neck short and thick, perianth persistent.

OTHER SPECIMENS: PERU: Amazonas: Chachapoyas: arriba de Lluy, 3000 m, 16 VI 1982, *Fernández 61*, USM! Cerros Calla Calla, 19 km above Leimebamba on the road to Balsas, 3100 m, 1 IV 1964, *Hutchison 4860*, UC! Cerros Calla Calla, 21 km above Leimebamba on the road to Balsas, 1350 m, 7 IV 1964, *Hutchison 4938*, AMES! UC! Kuelap, hort. Ecuagenera, 2000-2200 m, pressed 16 XII 1999, *Hágsater 12263*, AMO! (Illustration voucher.) Tingo, Kuelap, 1900 m, 4 IX 1989, *Vásquez 25469*, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to Peru, known only from the northern end of the Cordillera Oriental, east of the Marañón, between Chachapoyas and south of Leimebamba on the road to Balsas: on the mountains east of the Río Utcubamba, between 1900 and 3000 m altitude. Flowering in April, fruiting in September. Epiphytic in primary forest and on branches of sclerophyllous vegetation of bushes with scattered trees.

RECOGNITION: *Epidendrum pachygastrium* belongs to the Mancum Group, Ventricosum Subgroup, characterized by the sympodial habit, few, narrow leaves, racemose inflorescence subtended by 1-2 narrow, spathaceous bracts, and the delicate, purple flowers with an inflated nectary on the underside of the column, the lip laminar and more or less cordate. The species is recognized by the subcaespitose habit, medium sized plants with ancipitose stems, narrow spathaceous bract and racemose inflorescence with bright magenta colored, translucent flowers; the leaves are narrowly elliptic to lanceolate, 3-8 x 0.6-1.0 cm, and the lip is triangular-cordiform, slightly wider than long and with two large, subglobose calli nearly half as long as the lip. *Epidendrum ventricosum* Lindl. is closely related and very similar, but has longer, narrower leaves (4-12 x 0.3-0.8 cm), the lip is as wide as it is long, and the calli are smaller, about ¼ the length of the lip, and is found in the same general area but north of Chachapoyas, in the hills NW of lake Pomacocha. *Epidendrum leimebambense* Hágsater, which also grows south of Chachapoyas is similar, but the leaves are still wider, up to 1.7 cm wide, flowers larger, sepals 14-16 mm long, pale green marked with purple, and lip cordiform, 8 x 11 mm.



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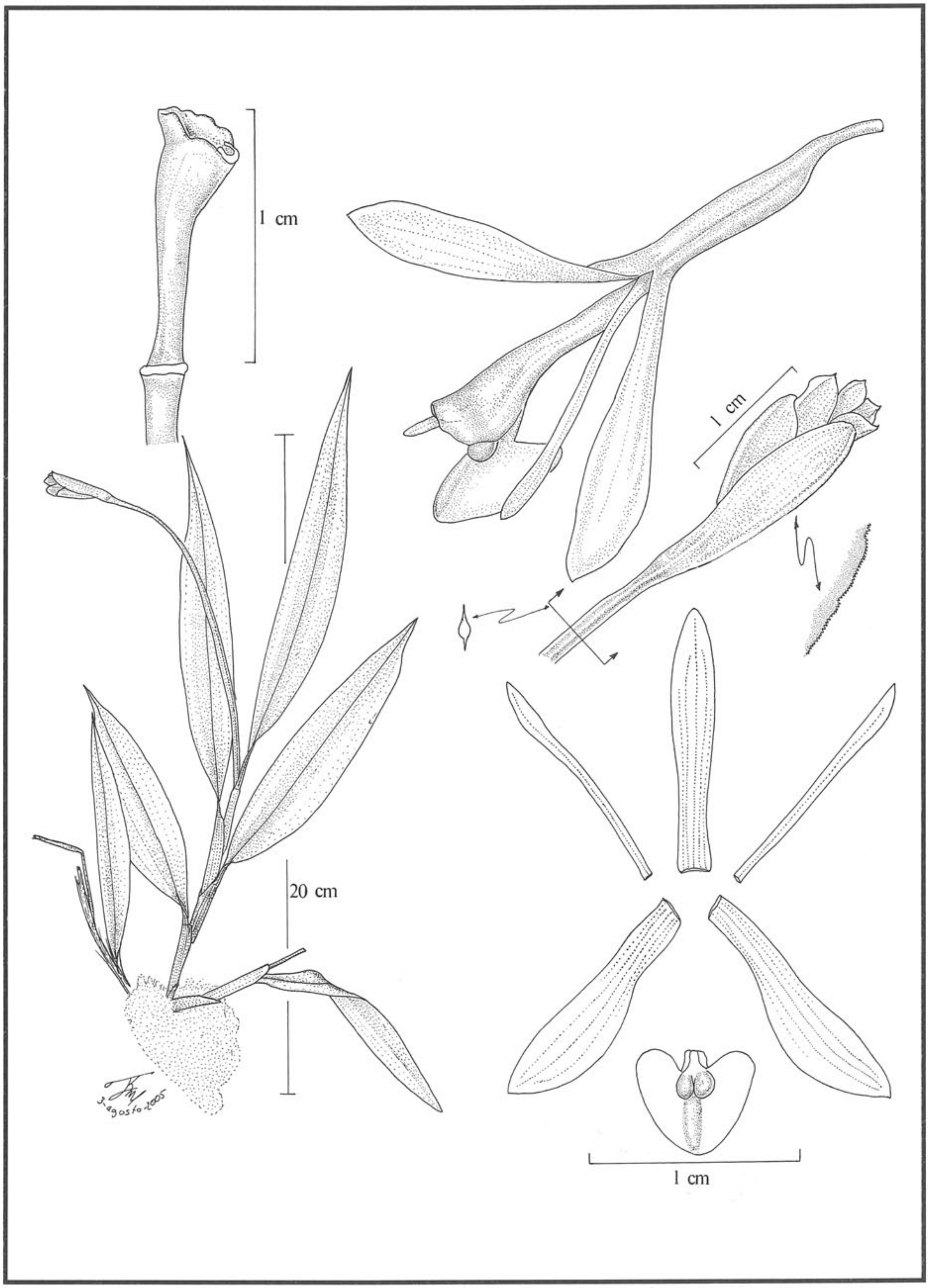
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, παχυς, thick, and γαστηρ, belly, in reference to the thick belly-like nectary formed by the column and lip.

NOTES: Schweinfurth considered this species as conspecific with *E. ventricosum*. However the species can be distinguished especially by their vegetative aspect and the calli, as noted by Schweinfurth. Though these differences seem minor, they suffice to recognize their status. Kraenzlin did not mention the Lindley species when he described the *E. pachygastrium*.

REFERENCES: Schweinfurth, C., 1944. Notes on Tropical American Orchids II, Bot. Mus. Leafl. 11(8): 217-248. Schweinfurth, C. 1959. Orchids of Peru. Fieldiana: Bot. 30(2): 526.

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EPIDENDRUM PANAMENSE Schltr. **Plate 971**

EPIDENDRUM PANAMENSE Schltr., Repert. Spec. Nov. Regni Veg. 12: 212. 1913.

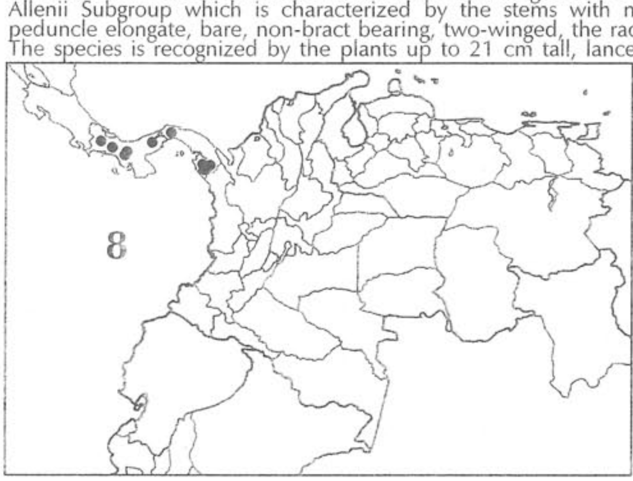
Type: PANAMA: Cerro de Garagará, Sambú basin, southern Darién, 500-974 m, 7 February 1912, ***Henri Pittier 5635.*** Holotype: US! Isotype: AMES!

Hierba epífita, simpodial, cespitosa, 9-21 cm de alto. **Raíces** basales, carnosas, delgadas, de 0.3-1.4 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, ancipitosos, erectos, rectos, 3-8.5 x 0.1-0.4 cm. **Hojas** 3-5, distribuidas a lo largo del tallo, alternas, articuladas, suberectas, generalmente sólo las 2-3 apicales persistentes, la basal más corta; vainas tubulares, lateralmente aplanadas, ancipitosas, finamente estriadas, 0.5-3 x 0.2-0.45 cm; lámina lanceolada, acuminada, largamente cuneada en la base, margen entero, 5-14.5 x 0.8-1.7 [2] cm. **Bráctea espatácea** 1, ubicada en el ápice del pedúnculo, lanceolada, aguda a cortamente acuminada, tubular en la base y conduplicada en la mitad apical, ancipitosa, las brácteas florales basales producidas dentro e imbricadas, 6-25 x 0.18-0.3 cm. **Inflorescencia** apical, racemosa en la primera floración, muy probablemente originando nuevos racimos a lo largo de varias temporadas y entonces pluriracemosa, dística, pauciflora, erecta, más corta o casi tan larga como las hojas apicales, 6-12.5 cm de largo; pedúnculo alargado, lateralmente aplanado, ancipitoso, bialado, las alas prominentes hacia la base, progresivamente más angostas hacia el ápice, 5.5-10 cm de largo; raquis corto, totalmente oculto por las brácteas florales, 1.2-1.8 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente elípticas, obtusas, conduplicadas, imbricadas, persistentes en el raquis aún después de la floración, 4-11 x 1.3-2.8 mm. **Ovario** terete, delgado, inflado ventralmente en los 2/3 apicales, no ornamentado, 13-15 mm de largo. **Flores** 4-8, sucesivas, resupinadas, de color blanco verdoso a blanco rosado algo teñidas de pardo; sin datos de fragancia. **Sépalos** entreabiertos, libres, oblanceolados, angostos cerca de la base, obtusos, diminutamente apiculados, 5-nervados, margen entero, extendido, 8-12 x 2-3 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, lineares, algo más amplios y oblicuos en el ápice, agudos, 1-nervados, margen entero, extendido, 7-11 x 0.2-0.5 mm. **Labelo** unido a la columna, entero, anchamente ovado-cordiforme, la base cordada, redondeado en el ápice, margen entero a subcrenulado, extendido, 3.5-5 x 3.5-5.7 mm; bicalloso, los callos carnosos, redondeados; disco unicarinado, la carina roma prolongándose hasta el ápice de la lámina. **Columna** recta, delgada, 6-7 mm de largo. **Clinandrio** prominente, (sobrepasando levemente el cuerpo de la columna), margen crenulado. **Antera y Polinios** no vistos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando probablemente 2/3 de la longitud del ovario. **Cápsula** no vista.

Epiphytic, caespitose, sympodial **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, ancipitose, erect, straight, short. **Leaves** 3-5, distributed throughout the stem, alternate, articulate, suberect, generally only the apical 2 or 3 persistent, the basal one shorter; sheaths tubular, laterally compressed, ancipitose, minutely striated; blade lanceolate, acuminate, long-cuneate at the base, margin entire. **Spathaceous bract** single, at the apex of the peduncle, lanceolate, acute to short acuminate, tubular at the base, conduplicate along the upper half, ancipitose, the floral bracts produced with and imbricating, about twice the size of the floral bracts. **Inflorescence** apical, racemose at first flowering, probably producing new racemes with time, and the pluriracemose, distichous, few-flowered, erect, shorter or as long as the apical leaves; peduncle elongate, laterally compressed, ancipitose, two-winged, the wings prominent towards the base, progressively narrower; rachis short, totally hidden by the floral bracts. **Floral bracts** much shorter than the ovary, narrowly elliptic, obtuse, conduplicate, imbricating, persistent even after flowering. **Ovary** terete, thin, inflated ventrally along the apical 2/3, unornamented. **Flowers** 4-8, successive, resupinate, greenish white to pink-white somewhat tinged with brown. **Sepals** partly spreading, free, oblanceolate, narrowed near the base, obtuse, minutely apiculate, 5-veined, margin entire, spreading; the lateral sepals oblique. **Petals** partly spreading, free, linear, somewhat wider and oblique towards the apex, acute, 1-veined, margin entire, spreading. **Lip** united to the column, entire, widely ovate-cordiform, the base cordate, apex rounded, margin entire to subcrenulate, spreading; bicallose, the calli fleshy, rounded; disc one-keeled, the keel, low rounded, reaching the apex of the blade. **Column** straight, thin. **Clinandrium-hood** prominent, slightly surpassing the body of the column, margin crenulate. **Rostellum** subapical, slit. **Nectary** probably penetrating about 2/3 of the ovary.

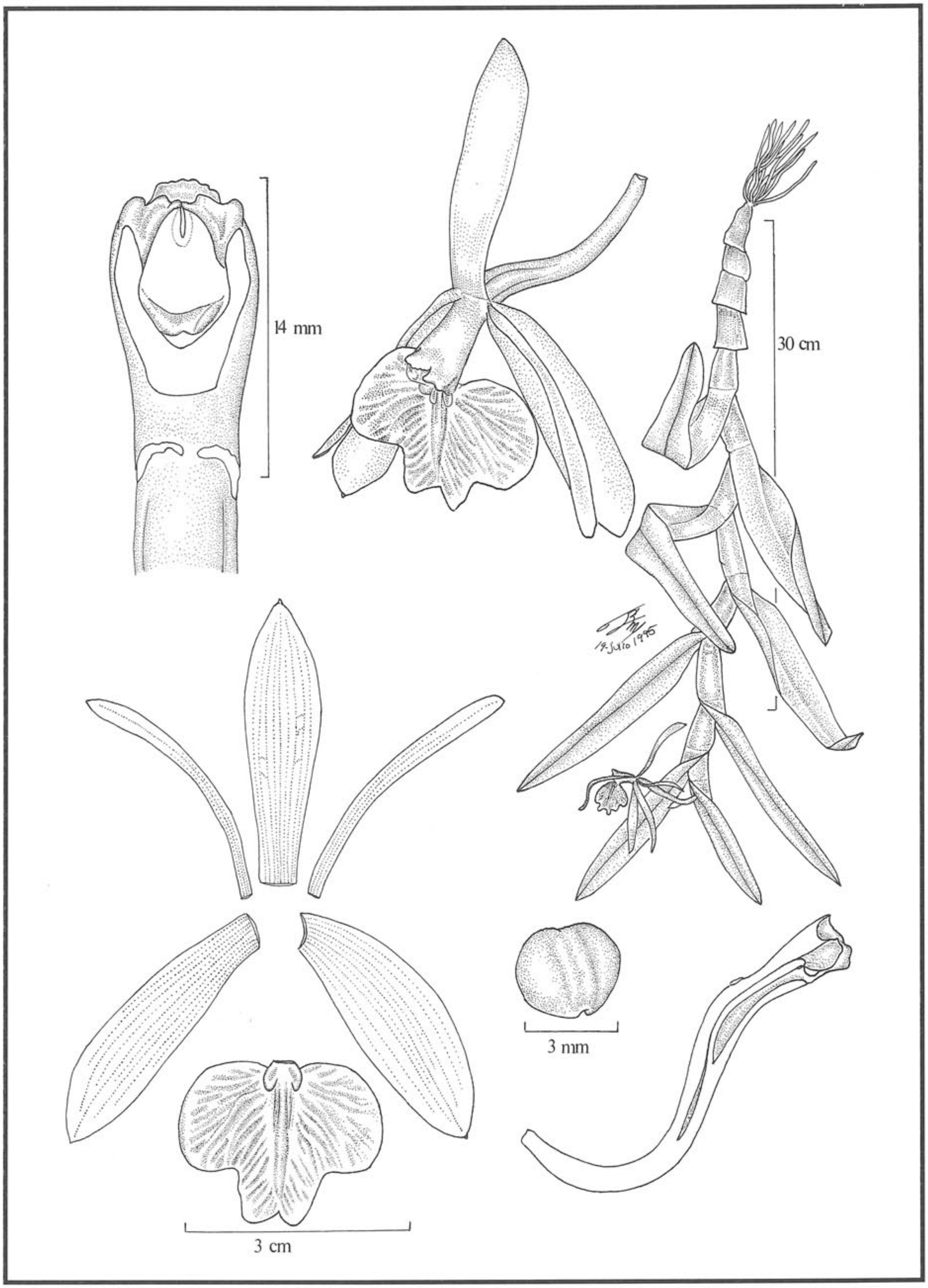
OTHER SPECIMENS: PANAMA: Chiriquí: Cerro Colorado, 1500 m, 15 II 1985, *Luer 10538*, MO! Fortuna Dam, 1050-1100 m, 10 XI 1980, *Sytsma 2211*, MO! **Coclé:** La Mesa, ca. 1000 m, 9 X 1972, *Kennedy 1755*, MO! **Darién:** Alturas de Nique, 800-900 m, 28 XII 1980, *Hartman 12343*, MO! Cerro Pirre, 1200 m, 10-20 VII 1977, *Folsom 4279*, MO! Cerro Pirre, 1200-1400 m, 14 XI 1977, *Folsom 6349*, MO! (Illustration voucher.) Coasi-Cana trail, 30 IV 1968, *Kirkbride 1263*, MO! NY! **Panamá:** Altos de Pacora, 650 m, 4 III 1976, *Luer 727*, SEL! **Veraguas:** Cerro Tute, 850-1300 m, 3 VIII 1975, *Dressler 5053*, AMO! Cerro Tute, 12 X 1975, *Dressler 5186*, AMO! Cerro Tute, 1150-1450 m, 6 II 1988, *McPherson 12087*, MO! Cerro Tute, ca. 1000 m, 19 VI 1975, *Mori 6763*, MO!See appendix.

OTHER RECORDS: COLOMBIA: Chocó: Bahía Solano, *Misas 52*, xerox of illustration, AMO!
DISTRIBUTION AND ECOLOGY: Ranging from Central Panama through the Darién to the Cochó in western Colombia, epiphytic, at 650-1500 m altitude. Flowering probably throughout the year, since the flowers are successive.
RECOGNITION: *Epidendrum panamense* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the apical inflorescence (rarely lateral), peduncle elongate, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricating, bracts. The species is recognized by the plants up to 21 cm tall, lanceolate leaves 0.8-1.7 [2] cm wide, the inflorescence never longer than the apical leaf, greenish to pink-white flowers, sepals 8-12 mm long, the lip widely ovate-cordiform, small, 3.5-5 x 3.5-5.7 mm. *Epidendrum transversellipticum* Hágsater has smaller plants, up to 16 cm tall, with narrowly elliptic leaves 0.5-2 cm wide, the inflorescence is longer than the apical leaf, the floral bracts very short (3 mm long), green flowers, sepals 6-7.5 mm long, the lip transversely elliptic, 2.5 x 4 mm. *Epidendrum allenii* L.O.Williams has larger plants, 20-38 mm tall, elliptic to lanceolate leaves 1.2-2.6 cm wide, the inflorescence longer than the apical leaf, pale pink to greenish flowers with the lip white, subreniform, wide, 10-12 x 12-15 mm. *Epidendrum maduroi* Hágsater & García-Cruz has larger, more robust, plants with elliptic-lanceolate leaves (13-23 x 1.8-2.9 cm), sepals and petals greenish bronze with an apple-green, subreniform lip.



CONSERVATION STATUS: DD. Data deficient. Apparently scarce.
ETYMOLOGY: In reference to the country of origin of the type, the Republic of Panama.

Authors: E. Santiago & E. Hágsater Illustrator: R. Jiménez M. Editors: E. Hágsater & L. Sánchez S.



EPIDENDRUM PENDENS L.O. Williams Plate 972

EPIDENDRUM PENDENS L.O.Williams, Ann. Missouri Bot. Gard. 28: 421, 1941.

Type: PANAMÁ: Coclé: Vicinity of La Mesa, El Valle de Antón, alt. 1000 m, 22 Jan 1941, ***Paul H. Allen 2570***. Holotype: AMES!

Hierba epífita, simpodial, cespitosa, colgante, 29-56 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 1.0-1.2 mm de grosor. **Tallos** sencillos, tipo caña, fuertemente lateralmente comprimidos, ancipitosos, flexuosos, 23-50 x 0.4-0.8 cm. **Hojas** 8-12, equidistantes a lo largo del tallo, oblicuamente colgantes con respecto al tallo; vaina lateralmente comprimida, ancipitosa, lisa, 2-4.5 cm de largo; lámina carnosa, lanceolada a elíptico lanceolada, ápice retuso, margen entero, algo revoluto, con una carina prominente, color verde grisáceas, 10-16 x 1.5-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical y lateral en el tallo maduro, florece una sola vez, sésil. **Bráctea floral** mucho más corta que el ovario. **Flores** 1 a raramente 2, simultáneas, resupinadas, verde grisáceas, concoloras con las partes vegetativas. **Ovario** no inflado, terete, liso, 43-54 x 3-4.5 mm. **Sépalos** extendidos, glabros, libres, lanceolados a elípticos, agudos, 9-nervados, subcoriáceos, margen entero, el dorsal 50-53 x 1.0-1.5 mm; los laterales 40-42 x 1.0-1.2. **Pétalos** extendidos, algo arqueado colgantes, linear lanceolados, agudos a redondeados, membranáceos, 3-nervados, margen entero, extendido, 50-52 x 3-4 mm. **Labelo** unido a la columna, trilobado, 23.5-30 x 28-37 mm; bicalloso, callos de forma laminar, con numerosas nervaduras engrosadas, prominentes; lóbulos laterales redondeados, transversalmente semiovados, margen entero, 10-11 x 15-16.5 mm; lóbulo medio cuneado a subcuadrado, emarginado a bilobado en el ápice, 8.0-8.5 x 10.5-11 mm. **Columna** recta, 14-16 x 3.2-4.6 mm. **Clinandrio** corto, margen entero. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cubriendo 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, pendent **herb**. **Stems** simple, laterally compressed, ancipitose. **Leaves** 8-12, lanceolate to elliptic-lanceolate, retuse, fleshy, margin entire, obliquely pendent, grayish green. **Inflorescence** apical or lateral, sessile. **Floral Bracts** shorter than the ovary. **Flowers** 1 rarely 2, simultaneous, resupinate, grayish green, same color as the vegetative parts. **Ovary** not inflated, terete smooth. **Sepals** spreading, free, lanceolate to elliptic, acute, glabrous, subcoriaceous, 9-veined. **Petals** spreading, linear-lanceolate, acute to rounded, membranaceous, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed; bicallose, the calli laminar, disc with many prominent, thickened veins; lateral lobes rounded, transversely semiovate, margin entire; midlobe cuneate to subquadrate, emarginate to bilobate. **Column** straight. **Clinandrium-hood** prominent, margin entire. **Anther** subspherical, 4-locular. **Pollinia** 4, obovoid, laterally compressed, subequal. **Rostellum** apical, slit. **Lateral lobes of the stigma** one third the length of the stigmatic cavity. **Nectary** penetrating one fourth of the ovary, smooth.

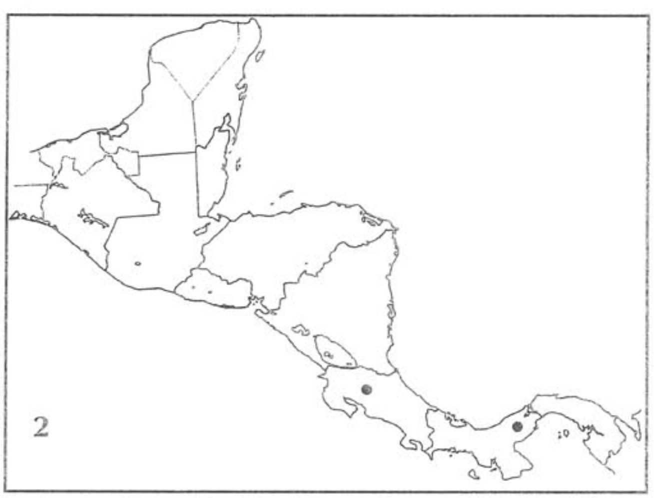
OTHER SPECIMENS: COSTA RICA: Alajuela: Reserva Biológica Monteverde, Río Peñas Blancas, 820 m, 24 I 1988, *Haber 7986*, CR! (Illustration voucher.) **PANAMÁ: Coclé:** Comprada en el mercado de Valle de Antón, 1 IV 1981, *Hágsater 6412*, AMO!

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica and Panama. Growing epiphytically in montane forest, from 800 to 1000 m altitude. Flowering from January to April.

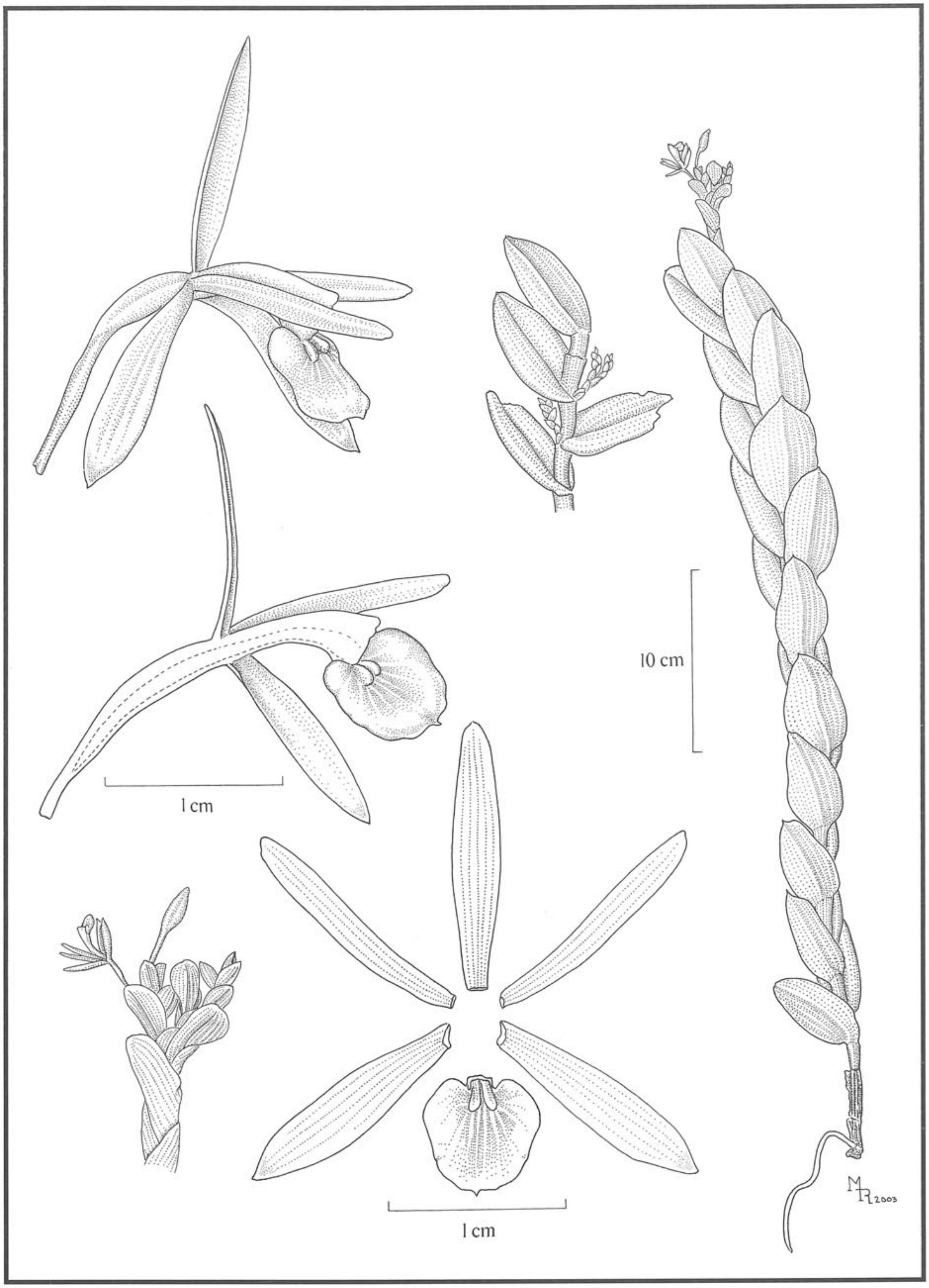
RECOGNITION: *Epidendrum pendens* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by its pendent plants, laterally compressed stems, green-grayish leaves and flowers; 1 to rarely 2 large flowers, sepals 9-veined, lip 3-lobed with many thickened veins. This species is unique within the Difforme Group due to the pendent plants and lateral inflorescence. It is vegetatively similar to *Epidendrum rhizomaniacum* Rchb. f. but that species has erect plants, root growing basally and from the nodes of the stems, green leaves, 2-3 white flowers and triquetrous ovary. There are other species of the Difforme Group (*Epidendrum vulgoamparoanum, Epidendrum romero-castañeda, Epidendrum platychilum* & *Epidendrum kerryae*) with thickened veins on the lip but those species are very different and the plants are erect not pendent.

CONSERVATION STATUS: DD: Data deficient. Very scarce in herbaria.

REFERENCE: Woodson Jr., R. E., & R. W. Schery, 1941. **Orchids of Panama.** Annals of the Missouri Botanical Garden, 28: 421, t. 23.



Authors: L. Sánchez S. & E. Hágsater Illustrator: R. Jiménez M. Editors: E. Hágsater & L. Sánchez S.
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EPIDENDRUM PHYLLOCHARIS Rchb.f.

Plate 973

EPIDENDRUM PHYLLOCHARIS Rchb.f., Xenia Orch. 3: 11. 1878.

Type: COSTA RICA: hort. Hamburger Botanischen Garten, 4 June 1877, ***Endres 2632***. Holotype: W 52931!

Hierba epífita, simpodial, cespitosa, erecta, 28-53 cm de alto. **Raíces** basales, escasas, delgadas, 0.8-2.3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados y ancipitosos arriba, erectos, rectos, 22.5-47 x 0.25-0.75 cm. **Hojas** numerosas, distribuidas a lo largo del tallo, alternas, articuladas, erecto extendidas, caedizas; vainas tubulares, algo infundibuliformes, lateralmente aplanadas, ancipitosas, finamente estriadas, fibrosas con el tiempo, 1.5-3.1 x 0.5-1.2 cm; lámina angostamente elíptica a oblongo lanceolada, ápice redondeado, cortamente bilobado, margen entero, coriácea, la superficie dorsal teñida de púrpura, 4.3-9.5 [11] x 1.5-3.5 cm. **Bráctea espatácea** 1 o raramente 2, ubicadas en la parte media a media apical del pedúnculo angostamente ovadas, ápice redondeado, tubulares en la base, conduplicadas en la mitad apical, ancipitosas, semejantes a las brácteas florales pero más grandes, 2-3 x 0.8-1.1 cm. **Inflorescencias** apical y varias laterales de la parte media apical del tallo, racemosas, cortas, compactas, paucifloras, dísticas, originando nuevos racimos del mismo pedúnculo a lo largo de varias temporadas, 1.7-7 cm de largo; pedúnculo de la inflorescencia apical lateralmente aplanado, ancipitoso, ca. 28 mm de largo, cubierto en la parte media apical por las brácteas espatáceas; pedúnculo de las inflorescencias laterales, ca. 10 mm de largo; oculto en su totalidad por brácteas cortas y tubulares, parcialmente imbricadas, 4-6 mm de largo; raquis totalmente oculto por las brácteas florales. **Brácteas florales** más cortas que el ovario, elípticas, conduplicadas, obtusas, imbricadas, 6-7 mm de largo. **Ovario** terete, delgado, liso, algo inflado ventralmente en las ¾ partes superiores, [13] 18-20 mm de largo. **Flores** varias, desarrollándose una a una por racimo, resupinadas, blancas o raramente verde pálido matizado de rojizo, sin datos de fragancia. **Sépalos** extendidos, libres, 5-nervados, margen extendido, entero, 13-15.4 x 2.7-3 mm; el **dorsal** oblongo elíptico, redondeado, los **laterales** oblongo oblanceolados, subagudos. **Pétalos** ascendentes, libres, lineares, redondeados, ligeramente oblicuos, 3-nervados, margen entero, extendido, 12-15 x 1.7-2 mm. **Labelo** unido a la columna, entero, pentagonal suborbicular, levemente cordado en la base, truncado en el ápice, con un apículo diminuto, margen entero, extendido, 6.5-7 x 6.3-6.5 mm; bicalloso, los callos delgados y redondeados, ligeramente divaricados; provisto de 5-7 quillas bajas y lisas, radiando desde la base hasta cerca del ápice de la lámina. **Columna** delgada en la base gradualmente engrosada hacia el ápice, ligeramente arqueada, 7-8 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el cuerpo de la columna), margen tridentado. **Antera** y **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando las ¾ partes del ovario, delgado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, scarce, thin. **Stems** simple, cane-like, terete at the base, laterally compressed and ancipitose above, erect, straight. **Leaves** numerous, distributed throughout the stems, alternate, articulate, erect-spreading, deciduous with time; sheaths tubular, somewhat infundibuliform, laterally compressed, ancipitose, minutely striated, becoming fibrous with time; blade narrowly elliptic to oblong-lanceolate, apex rounded, narrowly bilobed, coriaceous, margin entire, dorsally tinged purple. **Spathaceous bract** single or rarely 2, at the apex of the peduncle, narrowly ovate, apex rounded, tubular the base, conduplicate above, ancipitose, similar to the floral bracts but about 3-5 times larger. **Inflorescences** apical and several lateral, from the upper half of the stem, racemose, short, compact, few-flowered, distichous, producing new racemes from the same inflorescences through the years and thus becoming pluri-racemose; peduncle of the apical inflorescence laterally compressed, ancipitose, short, covered around the middle by the spathaceous bracts; peduncle of the lateral inflorescences short, totally covered by short, tubular, partly imbricating bracts; rachis totally hidden by the floral bracts. **Floral bracts** much shorter than the ovary, elliptic, conduplicate, obtuse, imbricating. **Ovary** terete, thin, smooth, somewhat ventrally inflated along the apical ¾. **Flowers** several, developing one at a time per raceme, resupinate, white or rarely pale green tinged with reddish. **Sepals** spreading, free, 5-veined, margin entire, spreading; the dorsal sepals oblong-elliptic, rounded, the lateral sepals oblong-oblanceolate, subacute. **Petals** ascending, free, linear, rounded, oblique, 3-veined, margin entire, spreading. **Lip** united to the column, entire, pentagonal-subcircular, base slightly cordate, apex truncate, with a minute apicule, margin entire, spreading; bicallose, the calli thin and rounded, slightly divaricate, disc provided with 5-7 low, smooth keels radiating from the base to near the apex of the lip. **Column** thin at the base, gradually thickened towards the apex, slightly arched. **Clinandrium-hood** prominent, (but not surpassing the body of the column), margin tridentate. **Rostellum** apical, slit. **Nectary** penetrating ¾ of the ovary, narrow, smooth.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from western Costa Rica to western Colombia in wet forests, at 650-1850 m altitude. Flowering from June to January, March.

RECOGNITION: *Epidendrum phyllocharis* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricating bracts on the peduncle, producing one flower at a time, and the Albertii Subgroup, which has apical and more commonly short, lateral inflorescences, (the apical one with an ancipitose peduncle terminating in a conduplicate spathaceous bract somewhat larger but similar to the floral bracts), with several progressively longer, imbricating bracts covering the short peduncle; the flowers are membranaceous, delicate, generally successive, one developing at a time from each raceme. The species is recognized by the short apical and lateral inflorescences with rounded floral bracts, with one or two prominent spathaceous bracts on the apical inflorescence, white or rarely pale greenish tinged with reddish, linear petals 1.7-2 mm wide and the pentagonal-subcircular lip with 5-7 radiating keels, and truncate and minutely apiculate at the apex. *Epidendrum albertii* Schltr. is vegetatively very similar, with similar colored flowers, but the lip is ovate-oblong with an acute apex, and the column strongly arched at the apex. *Epidendrum hexagonum* Hágsater & Dodson, from Ecuador, has larger plants, elliptic-oblanceolate leaves 13-18 cm long, green flowers with narrowly elliptic-oblanceolate petals 17-18 mm long, and the lip with a single central keel. *Epidendrum brachypodum* Hágsater has pale purple flowers with relatively wide sepals and petals, the petals spatulate-obtrullate, 5.4 mm wide, and the lip subrhombic-orbicular with a single prominent keel.



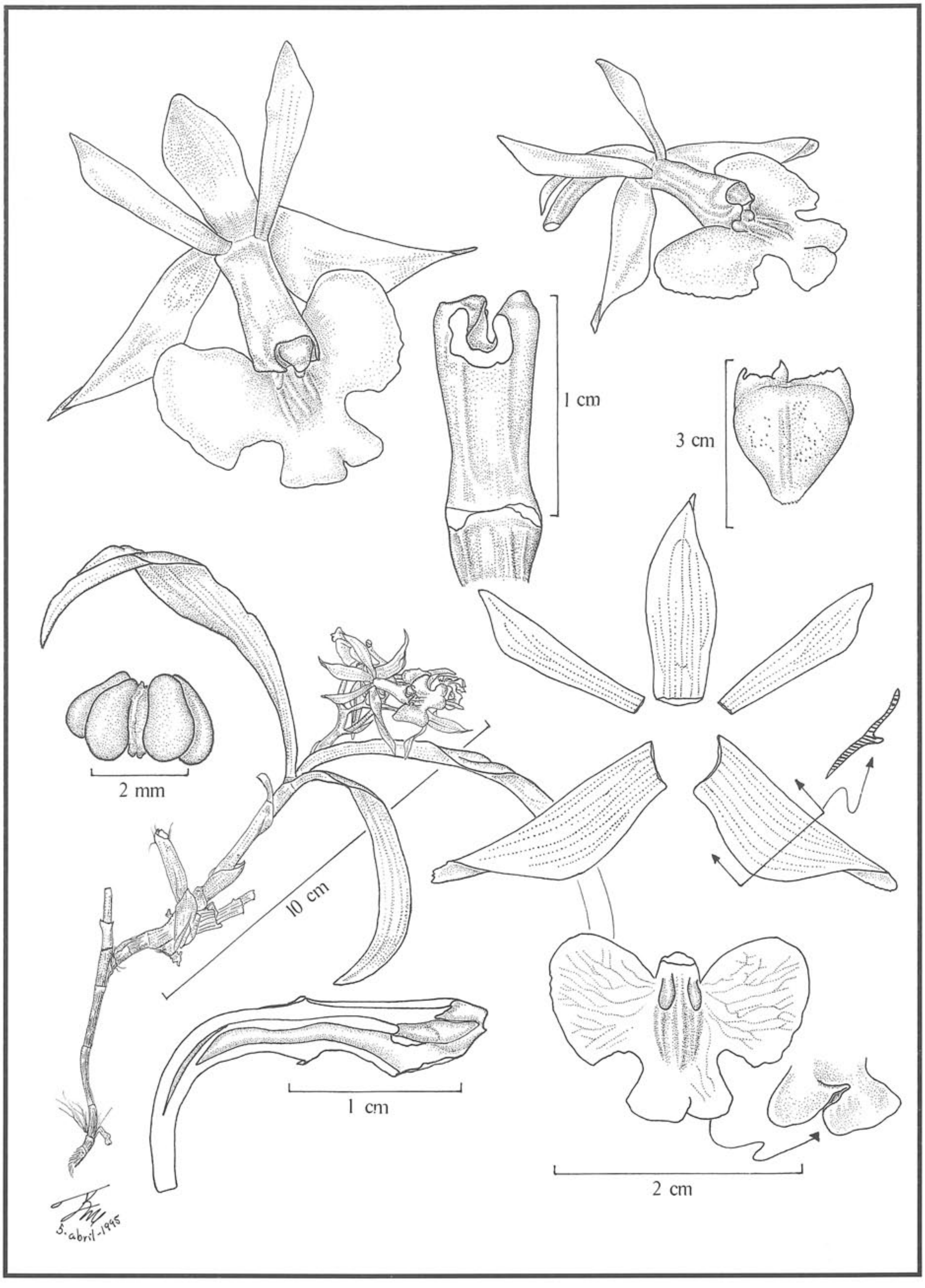
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek φυλλον, leaf, and χαρις, grace, in reference to the graceful leaves of the species.

REFERENCES: Hágsater, E., J. García-Cruz & L. Sánchez-Saldaña, 2003, *Epidendrum* in Hammel et al., **Manual de Plantas de Costa Rica**, Missouri Botanical Garden, 3: 153.

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EPIDENDRUM PLATYGLOSSUM Rchb.f. **Plate 974**

EPIDENDRUM PLATYGLOSSUM Rchb.f., Linnaea 41: 6. 1877.

Type: COLOMBIA: Antioquia: Medellín, ***Roezl s.n.*** Holotype: W-R!

Hierba epífita, simpodial, erecta, cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior, más de 15 cm de alto. **Raíces** no vistas. **Tallos** tipo caña, teretes, producidos de la parte media del tallo anterior, 4-7 x 0.3-0.4 cm. **Hojas** 4, agrupadas hacia el ápice del tallo, vaina tubular, finamente estriada, 15-25 x 3-4 mm; lámina angostamente elíptica, ápice agudo, margen entero, arqueada, lisa, desigual, 7-11.5 x 1.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta; 4.2 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, flexuoso, 1.3 cm de largo, provisto de una bráctea basal semejante a las florales, triangular, aguda, 4 mm de largo. **Brácteas florales** más cortas que el ovario, triangulares, acuminadas, abrazadoras, 5-7 mm de largo. **Flores** 3, simultáneas, resupinadas, sépalos y pétalos verdosos, columna y labelo algo teñida de rosado, sin datos de fragancia. **Ovario** terete, curveado, algo dilatado hacia el ápice, liso, no ornamentado, 12-17 mm de largo. **Sépalos** libres, elípticos, agudos a acuminados, 7-nervados, margen entero; el **dorsal** reflexo, con una carina dorsal baja, 16 x 5 mm; los **laterales** extendidos, oblicuos, aristados, dorsalmente carinados, la carina prominente, irregularmente dentada, 20 x 6 mm. **Pétalos** extendidos, libres, angostamente oblanceolados, obtusos, 3-nervados, margen entero, oblicuos, 16 x 3.5 mm. **Labelo** unido a la columna, trilobado, base cordada, margen ligeramente ondulado, 16 x 22 mm, bicalloso, callos pequeños, alargados; disco provisto de 3 carinas, desvaneciéndose hacia la base del lóbulo medio; lóbulos laterales obovoides, obtusos, 8 x 10.5 mm; lóbulo medio obcuneado, emarginado, retuso, bilobado, mucronado en el seno apical, 6 x 9 mm. **Columna** recta, delgada, 10 mm de largo. **Clinandrio** reducido, entero. **Antera** obovada, diminutamente papilosa, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas casi de la misma longitud de los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de ½ de largo de la cavidad estigmática. **Nactario** penetrando la mitad del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial **herb,** the new stem originates from a middle internode of the previous stem. **Stem** arising from the middle of the previous stem, short, cane-like, terete. **Leaves** 4, aggregate towards the apex of the stem, unequal, narrowly elliptic, acute, arching. **Inflorescence** apical, erect, racemose, peduncle ancipitose, short. **Floral bracts** about 1/3 of the length of the ovary, triangular, acuminate. **Flowers** 3, resupinate, simultaneous, sepals and petals greenish, column and lip tinged somewhat rose-colored. **Ovary** terete, curved, somewhat dilated towards the apex. **Sepals** free, elliptic, acute, 7-veined, the laterals acuminate-aristate, the prominent dorsal keel irregular dentate. **Petals** spreading, narrowly oblanceolate, obtuse, 3-veined. **Lip** united to the column, 3-lobed, cordate, bicallose, with 3 low evanescent keels; lateral lobes obovoid, obtuse, larger than the obcuneate, emarginate, retuse, midlobe. **Column** straight. **Clinandrium hood** reduced, entire. **Nectary** penetrating half the ovary, smooth.

OTHER SPECIMENS: COLOMBIA: Antioquia: El Retiro, IX 1973, *Gilberto Escobar 1045*, AMES! (Illustration voucher). Slide of live inflorescence, flower in spirit, AMO!

OTHER RECORDS: COLOMBIA: Antioquia: El Retiro, *G. Escobar 778*, slide of flowers AMO! El Retiro, *R. Escobar 858*, slide of flowers AMO!, published in *R. Escobar,* ed., Orquídeas Nativas de Colombia 5: 766, fig. 891.

DISTRIBUTION AND ECOLOGY: Known only from northern Colombia, from the Province of Antioquia, above Medellín. Flowering in September.

RECOGNITION: *Epidendrum platyglossum* belongs to the Arbuscula Group, Incomptum Subgroup, which is characterized by the sympodial growth, with each new growth arising from the middle of the previous growth, usually not branching, the few leaves aggregate towards the apex of the stem, and a few-flowered arching, racemose inflorescence, the flowers fleshy, greenish. The species is recognized by the, unequal, long, acute leaves, acute to acuminate tepals, the lateral sepals prominently aristate, relatively narrow, obtuse petals, and the deeply cordate lip with the lateral lobes somewhat larger than the midlobe which is obcuneate, bilobed and retuse. *Epidendrum tamaënse* Foldats has larger, fleshy, green to olive-green flowers turning yellowish, the lip marked with purple, the aristate sepals, wider, obtrullate, the 3-lobed lip with the lobes subequal in size, the lateral lobes suborbicular; that species is found on the Andes along the Colombian-Venezuelan border and in central Ecuador. The Ecuadorian *Epidendrum homoion* Hágsater & Dodson is similar, but the flowers are somewhat smaller, the sepals and petals shorter, not aristate, and the 14-16 x 26-28 mm lip has semiorbicular lateral lobes, and a smaller midlobe.

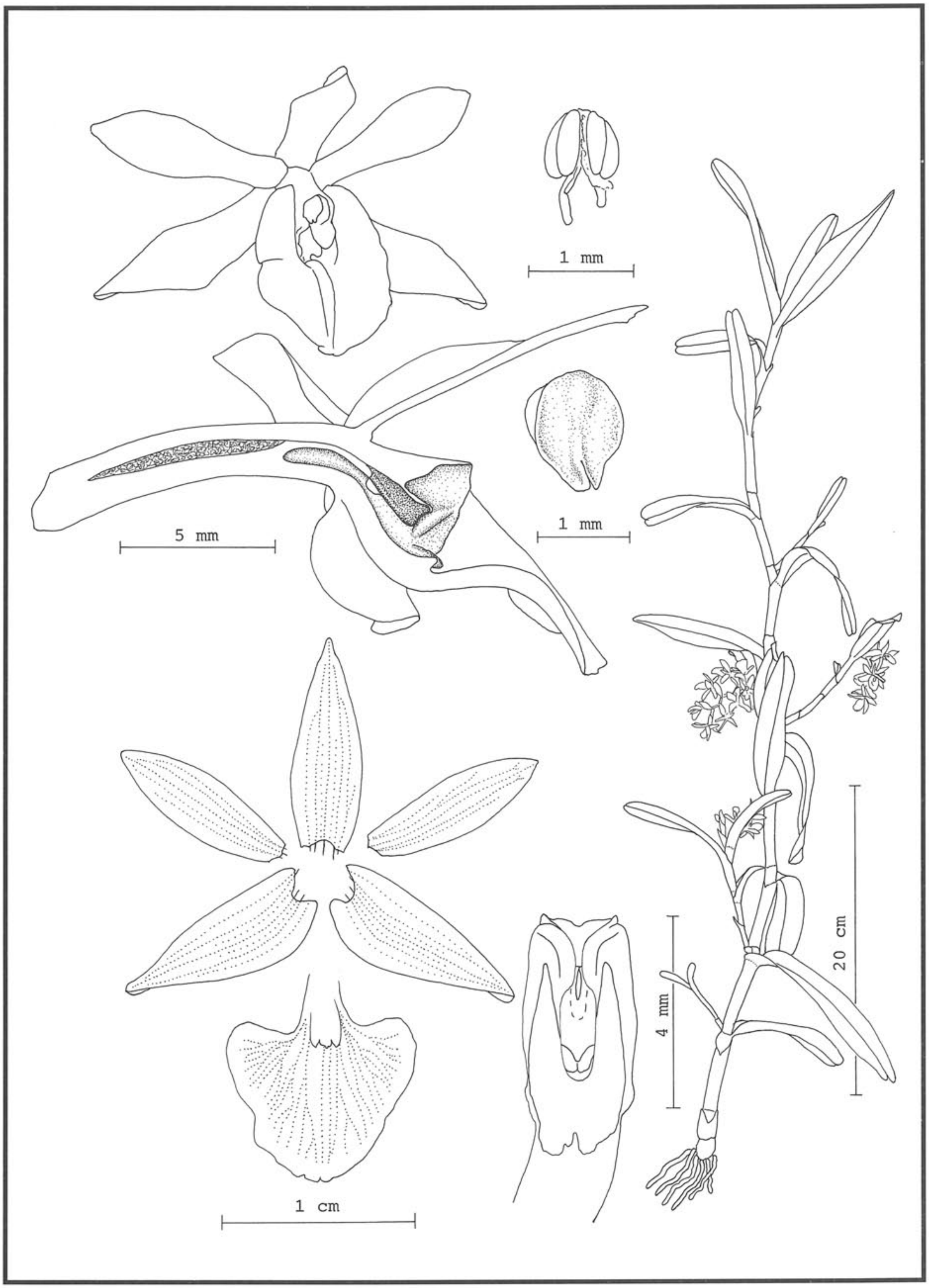
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek πλατυς, wide, broad, and γλωσσα, tongue, in reference to the wide lip.



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EPIDENDRUM PLATYSTIGMA Rchb.f.

Plate 975

EPIDENDRUM PLATYSTIGMA Rchb.f., Beitr. Orchid.-K. C. Amer. 83. 1866.

Type: COSTA RICA: Cari Blanco -San Miguel, 6 VIII 1857, ***Wendland 1250.*** Holotype: W! Tracing: AMES!

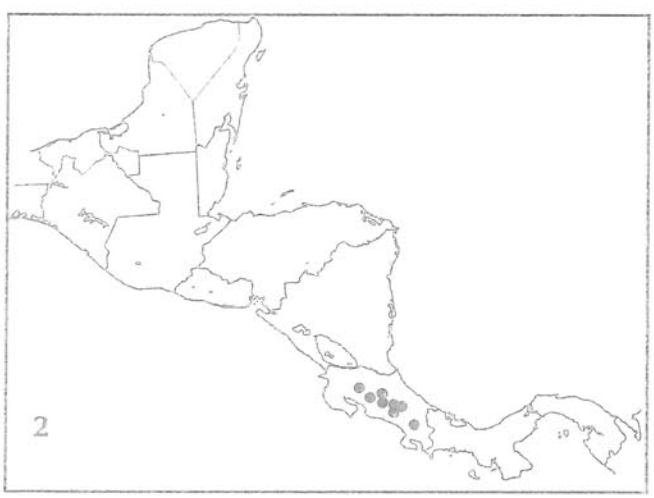
Hierba epífita, monopodial, ramificada, hasta 200 cm de alto. **Raíces** basales, filiformes, 0.7-1.3 mm de grosor. **Tallos** teretes, tipo caña, ramificados, el principal largo, grueso, hasta 200 x 0.5-0.9 cm, los secundarios y las ramas en floración más cortas y delgadas, produciendo nuevas ramas de un internodo subapical de la rama anterior, 4-50 a más x 0.25-0.35 cm. **Hojas** 6-12, distribuidas a lo largo del tallo principal, aparentemente persistentes aun cuando se ramifique, 3-6 en las ramas; vainas tubulares, rugoso estriadas, cartáceas, 2-5 cm de largo; láminas angostamente lanceoladas, retusas, 7-14 × 1-2 cm, las de las ramas 3.5-9 x 0.8-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, únicamente de las ramificaciones, racemosa, dística, erecta, 3-4 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.8-1 cm de largo; cubierto por 1-2 brácteas imbricadas, tubulares, acuminadas, 1-1.5 cm de largo; raquis en zigzag. **Brácteas florales** conduplicadas, mucho más largas que los ovarios, oblongo triangulares, acuminadas, 0.9-1.7 x 0.5-0.9 cm. **Flores** 6-9, simultáneas, el labelo orientado hacia el raquis, blancas con la columna verde, fragancia que recuerda al jazmín. **Ovario** recto, formando un ángulo menor a 45° con respecto a la columna, no ornamentado, terete, cubierto completamente por las brácteas florales, 8-10 mm de largo. **Sépalos** entreabiertos, lanceolados, agudos, 7-nervados, en ocasiones las laterales divididas dando la apariencia de ser 9-nervados, margen entero, revoluto, 9-10 × 3-5 mm. **Pétalos** extendidos, elípticos, agudos, 3-nervados con las venas laterales divididas, dando la apariencia de ser 5-nervados, margen entero, extendido, 8-10 × 4-5 mm. **Labelo** unido a la columna, base cordada, entero, cóncavo en posición natural, cordiforme, redondeado a obtuso, 10-11 × 10 mm; unicalloso, el callo tridentado, los dientes agudos; sin carinas evidentes. **Columna** recta, corta, ensanchada hacia el ápice, 3.5-4 mm de largo. **Clinandrio** corto, entero. **Antera** subesférica, 4-locular. **Polinios** 4, alargados, lateralmente comprimidos; caudículas suaves y granulosas, más largas que la longitud de los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales** del estigma de 1/2 de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/4 de la longitud del ovario. **Cápsula** elipsoide, sésil, cuello apical corto, 3 mm de largo, cuerpo 2 x 1 cm.

Epiphytic, monopodial, tall **herb**. **Roots** basal, filiform. **Stems** terete, cane-like, branching, the main stem tall, thick, the secondary and flowering branches short and thinner, with new branches produced from a subapical internode of the previous branch. **Leaves** 6-12 on the main stem, narrowly lanceolate, apex unequally bilobed, those of the branches smaller. **Inflorescence** apical from the branches, racemose, erect, distichous; peduncle short, laterally compressed, covered by 1-2, tubular, acuminate, imbricating bracts; rachis zigzag. **Floral bracts** conduplicate, much larger that the ovaries, oblong-triangular, acuminate. **Flowers** 6-9, simultaneous, distichous, the lip always facing the rachis, white with the column green; fragrance reminiscent of jasmine. **Ovary** straight, forming an angle of less than 45° with respect to the column, unornamented, terete, completely covered by the floral bract. **Sepals** partly spreading, lanceolate, acute, 7-veined, occasionally the lateral veins bifid and thus appearing 9-veined; margin entire, revolute. **Petals** spreading, elliptic, acute, 3-veined, the lateral veins bifid and thus appearing 5-veined, margin entire, spreading. **Lip** united to the column, entire, cordiform, concave in natural position, apex rounded to obtuse; callus single, tridentate, the teeth acute. **Column** straight, short. **Clinandrium-hood** short, entire. **Anther** subspherical, 4-celled. **Pollinia** 4, elongate, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** shallow, penetrating ¼ of the ovary. **Capsule** ellipsoid, sessile, with a short apical neck.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic from Costa Rica, along the Atlantic slope, close to the continental divide on the Cordillera Central and the Cordillera de Talamanca. Epiphytic in cloud forest, 1400-3150 m altitude. Flowering from July to October.

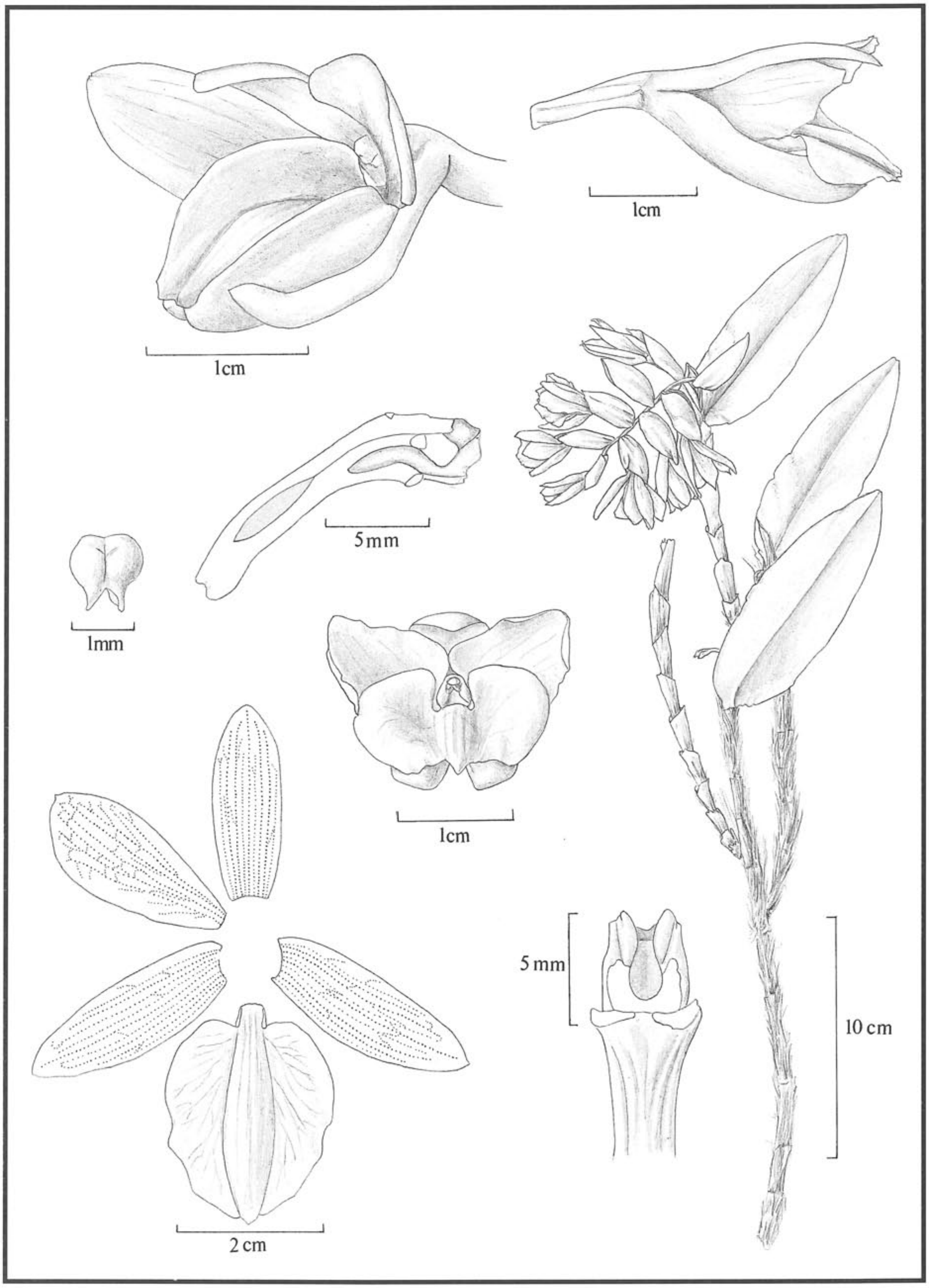
RECOGNITION: *Epidendrum platystigma* Rchb.f. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Platystigma Subgroup which has monopodial, erect plants with a clear primary stem; branching occurs from the axil of the leaves, producing short, few, small leaved branches, and these produce successive, short branches from a subapical internode, thus an old plant has numerous branches, these progressively made of fewer elements, and often lacking the juvenile, long leaves, at this stage the plant attains full flowering and often dies. The species is recognized by the narrowly lanceolate leaves on the main stem 7-14 x 1-2 cm, the 6-9-flowered inflorescence, the flowers white with the column green, the ovary arched, forming an angle of less than 45° with the column, sepals 3-5 mm wide, lanceolate, acute, and the lip cordiform with a tridentate laminar callus, the teeth acute. It is very similar to *Epidendrum ramonianum* Schltr. which has 3-6, white flowers, the column rarely green, the ovary strongly arched and forming an 90° angle with the column, the lip suborbicular, sometimes apiculate. *Epidendrum platyphyllostigma* Hágsater & García-Cruz has wider leaves on the main stem, 2-4.5 cm wide, pale green flowers, and a suborbicular lip with an entire callus.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *platy-* broad and *stigma*, in relation of the tall apex of the column.

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EPIDENDRUM POLYCHLAMYS Schltr. **Plate 976**

EPIDENDRUM POLYCHLAMYS Schltr., Fedde Repert. Spec. Nov. Regni Veg. 3: 109. 1906.

Type: COSTA RICA: [San José:] Auf den Bäumen der Wiedeplätze von [Alto de] La Palma, 24 August 1898, ***A. Tonduz 12492.*** Holotype: US 579474! Isotypes: AMES! G x2! US!

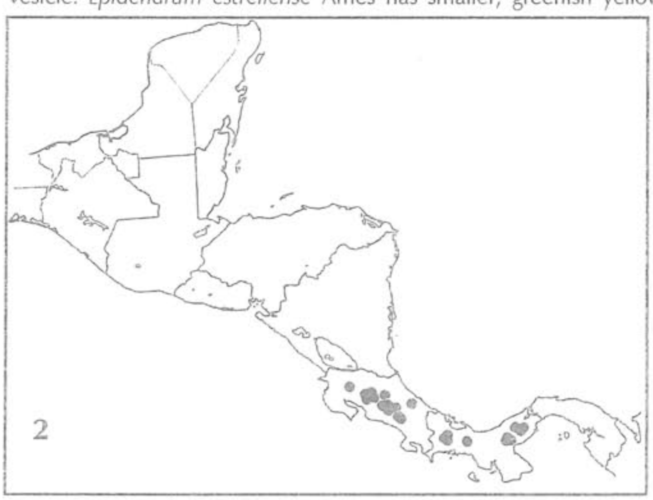
Hierba epífita, de simpodio rastrero, decumbente, de crecimiento sucesivo lateral, donde cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior, de más de 40 cm de alto. **Raíces** distribuidas a lo largo de los entrenudos basales de cada tallo, escasas, delgadas, carnosas, 1.5-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, arqueados, 11-30 x 3.5-7 cm; cubiertos por vainas tubulares, agudas, escariosas, fibrosas con el tiempo, 13-26 mm de largo. **Hojas** 1-3, agrupadas en el ápice de los tallos, alternas, articuladas, extendidas; vainas tubulares, ligeramente infladas en el ápice sin llegar a ser infundibuliformes, 8-16 mm de largo; lámina elíptica, subaguda, coriácea, margen entero, 4.5-15.5 x 2.3-3.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada nutante, dística, densa, 6-7 cm de largo; pedúnculo oculto totalmente por 2 brácteas semejantes a las florales, angostamente ovadas, agudas, conduplicadas, erectas, imbricadas, ca. 23 mm de largo; raquis recto, ocasionalmente oculto por las brácteas florales. **Brácteas florales** del doble del largo del ovario, cubriendo la mitad de la flor, las apicales progresivamente más cortas, ovadas, agudas, conduplicadas, ancipitosas, extendidas, 14-28 x 7-10 mm. **Flores** 5-15, sucesivas, aunque la mayoría están abiertas de manera simultánea, dísticas, resupinadas, de color amarillo, verde amarillento a raramente rosadas; fragantes. **Ovario** corto, terete, delgado, recto, liso, ligeramente ensanchado detrás del perianto, no inflado, sin formar vesícula, 8-11 mm de largo. **Sépalos** entreabiertos, libres, glabros, membranáceos, elíptico oblanceolados, agudos, apiculados, 9-nervados, margen entero, extendido; [13] 15-28 x 6-9 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, membranáceos, anchamente oblanceolados, subagudos, 3-nervados, las nervaduras laterales muy ramificadas dando la apariencia de ser 7-nervados, margen entero, extendido, 13 [16-26] x 7-9 mm. **Labelo** unido a la columna, entero, anchamente oblongo a obovado, base truncada a incipientemente cordada, ápice diminutamente apiculado, margen entero, ligeramente revoluto, 15-26 x 14-23 mm; ecalloso, con una carina central carnosa, prominente, ancha y roma que llega hasta el ápice de la lámina. **Columna** recta, corta, gruesa, 4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, con un par de dientes agudos en el ápice. **Polinios** no vistos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** apenas traspasando el perianto, no inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial, repent, scandent, decumbent, **herb. Roots** distributed throughout the basal internodes, scarce, thin, fleshy. **Stems** simple, cane-like, terete, thin, arching; covered by tubular, acute, scarious sheaths, becoming fibrous with time. **Leaves** 1-3, aggregate towards the apex of the stem, alternate, articulate, spreading; sheaths tubular, slightly inflated towards the apex; blade elliptic, subacute, coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, arching-nutant, dense; peduncle totally hidden by 2 bracts similar to the floral bracts, narrowly ovate, acute, conduplicate, ancipitose, spreading; rachis straight, occasionally hidden by the floral bracts. **Floral bracts** twice as long as the ovary, covering half the flower, the apical bracts progressively shorter, ovate, acute, conduplicate, ancipitose, spreading. **Flowers** 5-15, successive, though most can be open at one time, distichous, resupinate, yellow, yellowish green to rarely pink, fragrant. **Ovary** sort, terete, thin, straight, smooth, slightly thickened behind the perianth, not inflated. **Sepals** partly spreading, free, glabrous, membranaceous, elliptic-oblanceolate, acute, apiculate, 9-veined, margin entire, spreading; the lateral sepals oblique. **Petals** partly spreading, free, membranaceous, widely oblanceolate, subacute, 3-veined, the lateral veins much branched and thus appearing 7-veined, margin entire, spreading. **Lip** united to the column, entire, widely oblong to obovate, base truncate to slightly cordate, the apex minutely apiculate, margin entire, slightly revolute; ecallose, with a prominent, wide, rounded, fleshy, central keel that runs to the apex of the lip. **Column** straight, short, thick. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, with a pair of acute teeth at the apex. **Rostellum** apical, slit. **Nectary** barely penetrating the ovary, not inflated, smooth.

OTHER SPECIMEN AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from central Costa Rica to western Panama; epiphyte and frequently growing in moss along road-side banks near the top ridge of the cordillera, at 1100-2500 m altitude. Flowering probably throughout the year.

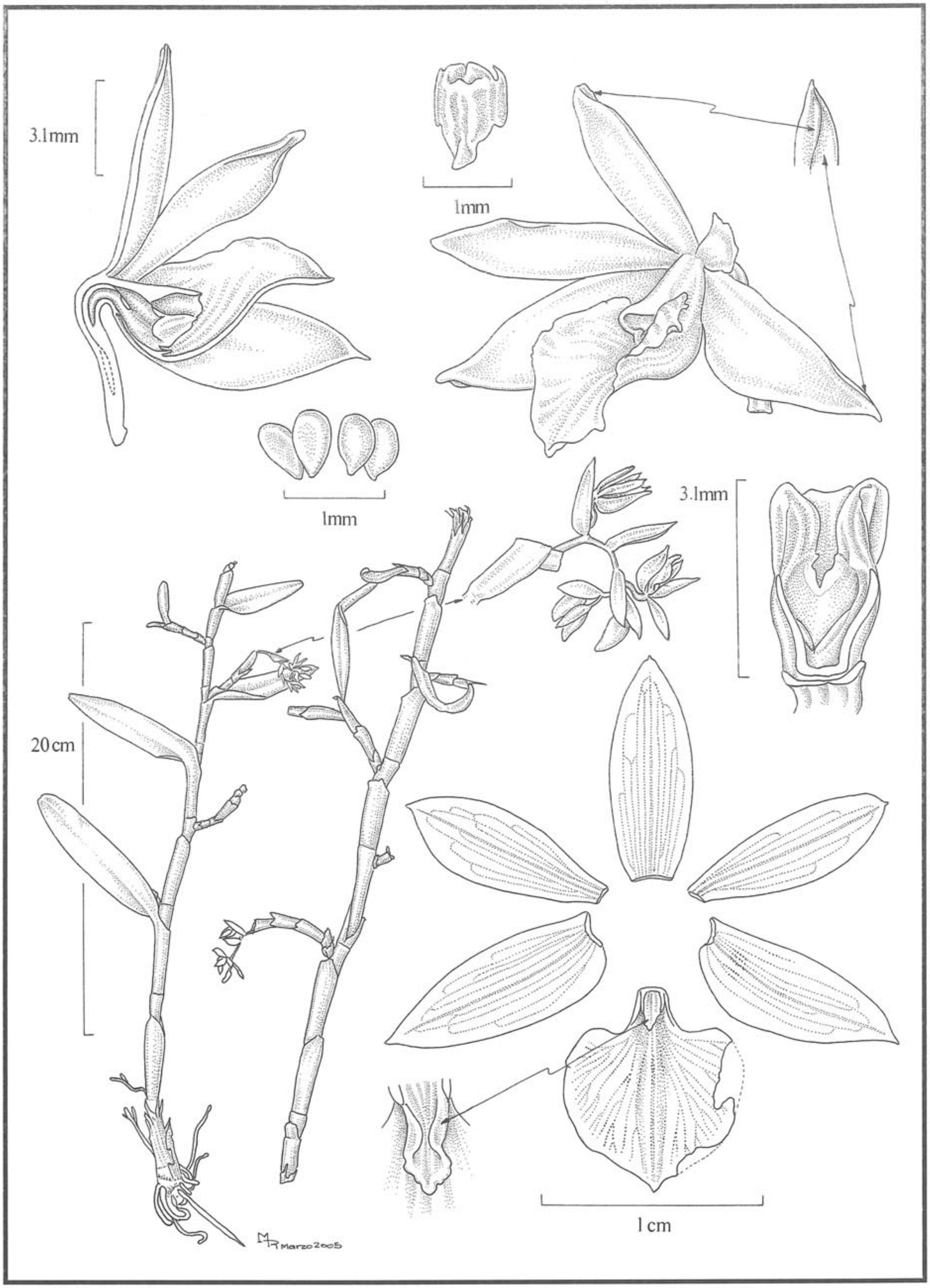
RECOGNITION: *Epidendrum polychlamys* belongs to the Polychlamys Group, Polychlamys Subgroup which is characterized by scandent habit due to the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, the distichous, apical inflorescence with prominent, conduplicate, acute, glumaceous floral bracts. The species is distinguished by the medium to large showy flowers, sepals partly spreading, [13]15-28 mm long yellowish green to rarely cinnamon-pink, the petals widely oblanceolate 7-9 mm wide; the ovary not forming a vesicle, and the lip obovate or widely oblong, with a central fleshy keel which reaches the apex of the lip. *Epidendrum atwoodchlamys* Hágsater has large, yellow to greenish yellow flowers, with the lateral sepals connate at the base, 18-24 mm long, the petals widely obovate, 10-12.5 mm wide, a suborbicular lip with the base cordate, and the ovary does not form a vesicle. *Epidendrum estrellense* Ames has smaller, greenish yellow to green flowers, the sepals 6.5-10 mm long, the lip suborbicular, cordate, with 3 thin keels; the ovary does not form a vesicle. *Epidendrum dolichochlamys* Hágsater & E.Santiago has an elongate flexuous inflorescence, with large drooping floral bracts, showy flowers, the sepals 20-22 mm long, green tinged wine-red to purple, and the nectary forming a prominent vesicle along the apical half of the ovary.


2

CONSERVATION STATUS: DD. Data deficient. Apparently widespread on old road-side banks along the Cordillera de Talamanca.

ETYMOLOGY: From the Greek πολυ, many, and χλαμυς, a military cloak, mantle, in reference to the large, prominent, floral bracts which embrace the ovary and half of the flower, and which distinguish this species.

Authors: E. Santiago & E. Hágsater Illustrator: M. López R. Editors: E. Hágsater & L. Sánchez S.



EPIDENDRUM RAMONIANUM Schltr.

Plate 977

EPIDENDRUM RAMONIANUM Schltr., Repert Spec. Nov. Regni Veg. Beih. 19: 217. 1923.

Type: COSTA RICA: Bois humides, San Pedro de San Ramon, 1100-1200 m, Septembre 1921, ***A. M. Brenes 101.*** Holotype: B, destroyed. Lectotype (designated by Barringer 1986): AMES! Isolectotypes: CR! NY! (Illustration voucher.)

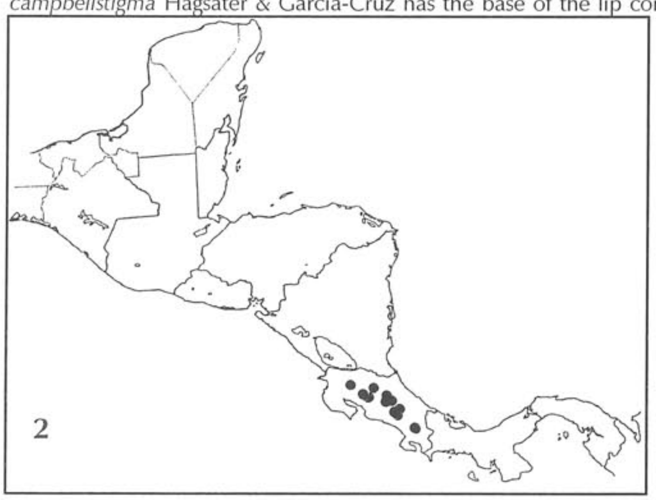
Hierba epífita, monopodial, ramificada, hasta 200 cm de alto. **Raíces** basales, gruesas, ca. 3 mm de grosor. **Tallos** teretes, tipo caña, ramificados, el principal, alto y vigoroso, muy ramificado, hasta 200 x 0.10-1.5 cm; las ramificaciones cortas, produciendo nuevas ramas de un internodo subapical, 4-6 x 0.6-1.0 cm. **Hojas** distribuidas a lo largo del tallo principal, las cuales se caen cuando se ramifica, las hojas de las ramas persistentes, 2-4 raramente 5, distribuídas a lo largo de las ramas; vainas tubulares, rugoso-estriadas, coriáceas, 2-5.5 cm de largo; láminas angostamente lanceoladas a oblongo-elípticas, bilobadas a retusas, las del tallo principal 4.5-9 x 1-1.7 cm, las de las ramas 3-7 x 0.7-1.1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, únicamente de las ramificaciones, racemosa, arqueada, 2-3 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.8-1 cm de largo; cubierto por 1-2 brácteas imbricadas, tubulares, acuminadas 0.7-1 cm de largo; raquis fractiflexo. **Brácteas florales** conduplicadas, más largas que el ovario, no imbricadas, oblongo triangulares, acuminadas, 0.9-1.1 x 0.5-0.9 cm. **Flores** 3-6, simultáneas, el labelo orientado hacia el raquis, blancas raramente con la columna verde; muy fragantes. **Ovario** fuertemente arqueado, formando un ángulo de 90° con respecto a la columna, no ornamentado, terete, cubierto completamente por la bráctea floral, 8-9 mm de largo. **Sépalos** entreabiertos, lanceolados, agudos, margen entero, revoluto, 9-10.5 x 3-4 mm; el dorsal 7-nervado, los laterales 9-nervados. **Pétalos** entreabiertos, angostamente elípticos, agudos, 5-7-nervados, margen entero, extendido, 9-10 x 2-3 mm. **Labelo** unido a la columna, entero, subcordiforme, cóncavo en posición natural, base truncada, ápice en ocasiones ligeramente apiculado, 6-6.5 x 5.5-6 mm; unicalloso, callo tridentado, los dientes redondeados; disco sin carinas evidentes. **Columna** recta, corta, ensanchada hacia el ápice, 3-4 mm de largo. **Clinandrio** ligeramente sobrepasando el ápice de la columna, entero. **Antera** ovoidea, con una quilla corta apical, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas algo más largas que los polinios, suaves y granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, cubriendo un cuarto de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/4 del ovario. **Cápsula** no vista.

Epiphytic, monopodial, branching **herb. Roots** basal, thick. **Stems** terete, cane-like, branching, the main stem tall, thick, much branched, the branches short, producing successive new branches from the subapical internodes. **Leaves** distributed throughout the main stem, deciduous when branched and mature, the branches with 2-4, rarely 5, aggregate towards the apex of each branch; sheaths tubular, rugose-striated, coriaceous; blade narrowly lanceolate to oblong-elliptic, bilobed to retuse, those of the main stem up to 9 x 1.7 cm, those of the branches little more than half the size. **Inflorescence** apical, distichous, from the main stem and branches, arching; peduncle short, laterally compressed, straight, covered by 1-2 tubular, acuminate, imbricating bracts; rachis fractiflex. **Floral bracts** conduplicate, longer than the ovary, non-imbricating, oblong-triangular, acuminate. **Flowers** 3-6, simultaneous, distichous, the lip facing towards the rachis, white, with the column rarely green; very fragrant. **Ovary** strongly arching near the apex, forming a 90° angle with the column, smooth, terete, completely covered by the floral bract. **Sepals** partly spreading, lanceolate, acute, margin entire, revolute, the dorsal sepals 7-veined, the laterals 9-veined. **Petals** partly spreading, narrowly elliptic, acute, 5-7-veined, margin entire, spreading. **Lip** united to the column, entire, subcordiform, base truncate, concave in natural position, base truncate, apex sometimes apiculate; callus single, tridentate, the teeth rounded; disc without evident keels. **Column** straight, short, dilated towards the apex. **Clinandrium-hood** slightly surpassing the body of the column, entire. **Anther** ovoid, with a short apical keel, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles somewhat longer than the pollinia, soft and granulose; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** penetrating ¼ of the ovary.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica, in part of Central Cordillera and Cordillera of Talamanca. Epiphyte in cloud forest and pastures, 1150-2200 m altitude. Flowering from July to November.

RECOGNITION: *Epidendrum ramonianum* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the distichous inflorescence, and the single callus, and the Platystigma Subgroup which has monopodial, erect plants with a clear primary stem; branching occurs from the axil of the leaves, producing few, short, small-leaved branches, and these produce successive, short branches from a subapical internode, thus an old plant has numerous branches, these progressively made of fewer elements, and often lacking the juvenile, long leaves of the main stem; at this stage the plant attains full flowering and often dies. The species is distinguished by its 3-6-flowered inflorescence, the very fragrant flowers white, column rarely green, ovary forming and a 90° angle with the column, sepals lanceolate, acute, 3-4 mm wide, lip subcordate, sometimes apiculate, callus laminar, tridentate, teeth rounded, column straight, the prominent clinandrium somewhat surpassing the body of the column. It is similar to *E. platystigma* Rchb.f. which has 6-9 white flowers with a green column, the ovary forming an angle of less than 45° with the column, the lip cordiform. *Epidendrum campbellstigma* Hágsater & García-Cruz has the base of the lip cordate, the callus entire, apple green flowers with a white lip. *Epidendrum penneystigma* Hágsater & García-Cruz has the ovary forming a 60° angle, reniform lip with the base cordate, and white flowers.

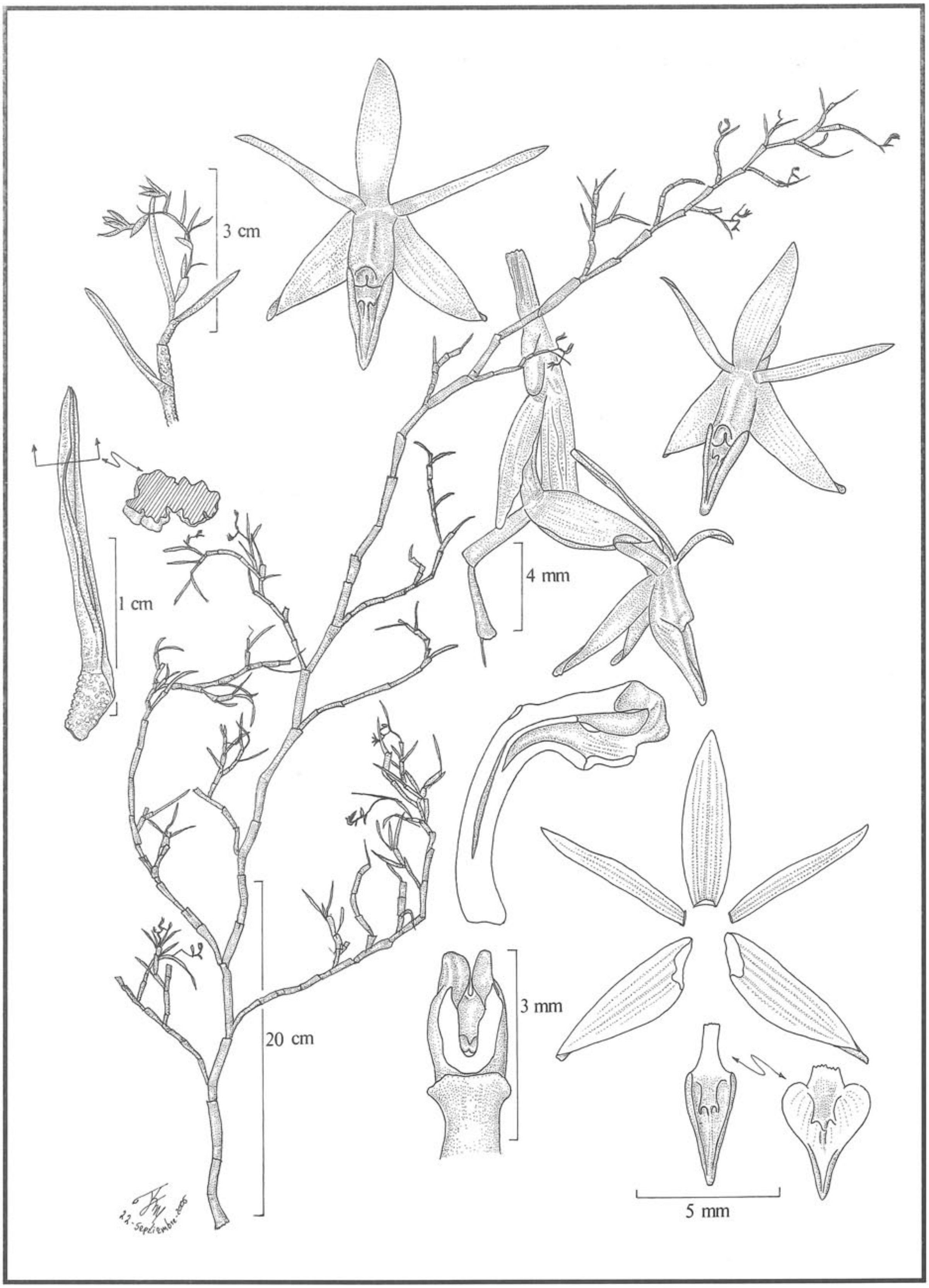


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the town of San Ramón, where the type was collected.

REFERENCES: Barringer 1986. Schlechter's Costa Rican types I. Fieldiana: Bot. 17: 7. Chicago, Illinois. U.S.A.

Authors: L. Sánchez S. & E. Hágsater Illustrator: M. López R. Editors: E. Hágsater & L. Sánchez S.
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM RAMOSISSIMUM Ames & C.Schweinf.

Plate 978

EPIDENDRUM RAMOSISSIMUM Ames & C.Schweinf., Schedul. Orchid. 8: 48. 1925.

Type: COSTA RICA: [Cartago:] El Calvario, Ujarrás, 3600 ft, 12 January 1924, ***Charles H. Lankester 581.*** Holotype: AMES 28129! (Illustration, AMO!) Isotypes: AMES 28124! AMES 28721!

Hierba, epífita, monopodial ramificada, 30-60 cm. **Raíces** basales, filiformes a gruesas, 0.5-1.8 mm de grosor. **Tallos** ramificados, tipo caña, teretes, cubiertos por vainas verrugosas, el principal mayor hasta 30 x 0.15-0.25 cm, las ramas más cortas, 4-15 x 0.07-0.13 cm. **Hojas** 14 ó más en el tallo principal, distribuidas a lo largo del tallo, generalmente caedizas conforme va madurando la planta; 3-7 en las ramas, distribuidas en el tercio apical; vaina foliar tubular, varrucosa, 0.5-2 cm de largo; lámina foliar linear a ligulada, aguda a obtusa, cilíndrica, fuertemente acanalada, las del tallo principal, 7-14 x 1-2 cm, las de las ramas, 1-4 x 0.8-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, dística, laxa, el raquis fractiflexo; pedúnculo corto, 1-2 cm de largo. **Brácteas florales** tan largas como los ovarios, conduplicadas, oblongas, obtusas. **Flores** 1-4, simultáneas, resupinadas, blancas a verdoso cremoso, fragancia no registrada. **Ovario** terete, no inflado, no ornamentado, 1.7-2 x 0.4-0.6 mm. **Sépalos** glabros, libres entreabiertos, estrechamente lanceolados, acuminados, 5-nervados, margen entero, revoluto, 6.5–7.5 x 1.7-2 mm; los laterales oblicuos. **Pétalos** glabros, libres, entreabiertos, lineares, obtusos, 3-nervados, margen entero, extendido, 6-7 x 0.7-1 mm. **Labelo** unido a la columna, cordiforme, tubular, margen involuto en posición natural, base truncada, acuminado; 3-4 x 2.5-3 mm; callo tridentado, el diente medio prolongándose en una vena central carnosa, la cual llega hasta la mitad del disco. **Columna** corta, gruesa, recta, 2.5-3 mm de largo. **Clinandrio** reducido, entero. **Antera** no vista. **Polinios** no vistos. **Lóbulos laterales del estigma** cortos. **Nectario** corto, penetrando 1/3 del ovario, no ornamentado. **Cápsula** ovoide, pedicelo muy corto, 1 mm de largo, cuerpo 12 x 5 mm, cuello apical 2.5 mm de largo.

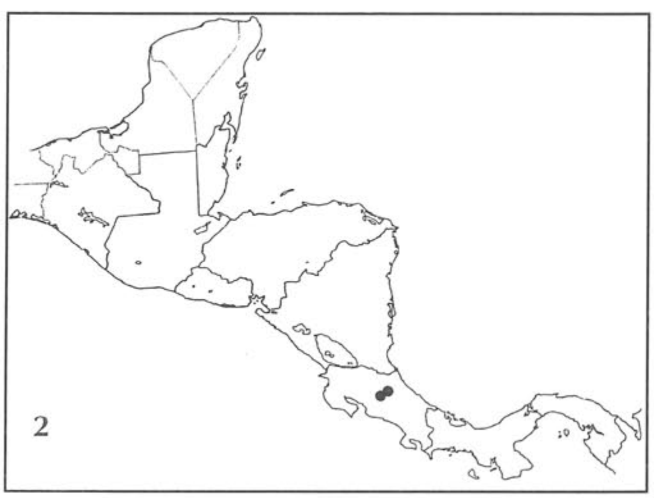
Epiphytic, monopodial, branching **herb. Roots** basal, filiform to thick. **Stems** branching, cane-like, terete, covered by verrucose sheaths, the main stem tall, the branches up to half the length. **Leaves** 14 or more distributed throughout the main stem, deciduous as the plant matures; 3-7 on the branches, distributed throughout the apical third; tubular sheaths verrucose; blade linear to ligulate, acute to obtuse, terete, deeply channeled, those of the main stem much longer than those of the branches. **Inflorescence** apical, distichous, lax-flowered, rachis fractiflex, peduncle short. **Floral bracts** as long as the ovaries, conduplicate, oblong, obtuse. **Flowers** 1-4, simultaneous, resupinate, white to creamy green. **Ovary** terete, not inflated, smooth. **Sepals** glabrous, free, partly spreading, narrowly lanceolate, acuminate, 5-veined, margin entire, revolute; the lateral sepals oblique. **Petals** glabrous, free, partly spreading, linear, obtuse, 3-veined, margin entire, spreading. **Lip** united to the column, cordiform, tubular, margin involute in natural position, base truncate, acuminate; callus tridentate, the mid tooth prolonged into a thickened central vein which reaches the middle of the disc. **Column** short, thick, straight. **Clinandrium-hood** reduced, entire. **Nectary** short, penetrating 1/3 of the ovary, smooth. **Capsule** ovoid, pedicel very short, body occupying most of the length, apical beak short.

OTHER SPECIMENS: COSTA RICA: Alajuela: San Pedro de San Ramon, 1050 m, 17 X 1922, *Brenes 1450(264)*, AMES! CR! NY! Río San Lorencito, 800 m, 22 X 1992, *Blanco 1651*, USJ! **Limón:** Vicinity of Guápiles, 300-500 m, 12 III 1924, *Standley 37453*, AMES! **San José:** La Hondura, 1300-1700 m, 2 III 1924, *Standley 36383*, AMES! **Cartago:** Vertiente Atlantica entre Paraiso de Cartago y Salto de Los Novios al lado del Rio Paez, ca. 1250 m, 15 III 1983, *Hágsater 7112*, AMO! USJ! Las Cóncavas, *Lankester 1089*, AMES x4! La Castilla, 16 XI 1958, *Lankester 1723*, SEL x2! (Illustration voucher, flowers in spirit, AMO!)

DISTRIBUTION AND ECOLOGY: Endemic to the Atlantic lowland slope of central Costa Rica, epiphytic in rainforest at 500-1350 m altitude. Flowering from October to January.

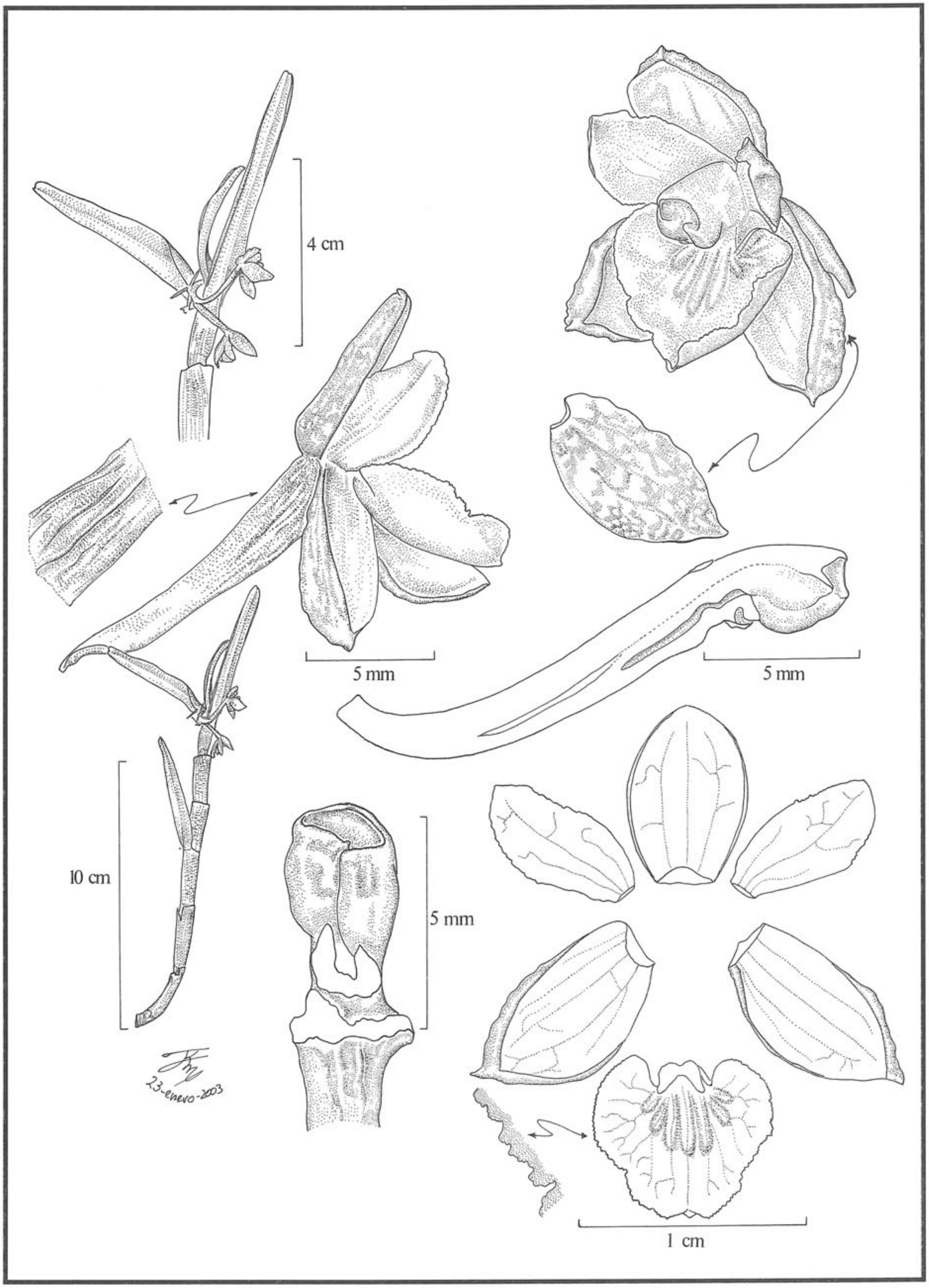
RECOGNITION: *Epidendrum ramosissimum* Ames & C. Schweinf. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by its terete, strongly canaliculate, linear leaves, the floral bracts longer than the ovaries, 1-4 flowers, the sepals 6.5-7.5 mm long, narrowly lanceolate, and the lip tubular-involute in natural position, cordiform, acuminate, the base truncate, with a tridentate callus. It is similar to *Epidendrum lancilabium* Schltr., which also has terete leaves, but a shorter habit, and larger, purple-green flowers, the sepals 9-11 mm long, and a lanceolate lip. *Epidendrum sanchoi* Ames has a similar branching habit but flat leaves, smaller flowers, sepals 4.5-5 mm long, the lip triangular, cordate, ecallose, with 3, thickened veins on the disc. *Epidendrum anoglossoides* Ames & C.Schweinf. grows at higher elevations, at 2300-2800 m altitude, has flat, elliptic-lanceolate leaves, 3-10, larger, yellowish green flowers, sepals 7-9 mm long, and an arching, nutant inflorescence. *Epidendrum elcimeyae* Hágsater & García-Cruz also has lanceolate, flat leaves, yellowish green flowers, sepals 6.5-7 mm long and a triangular cordate lip.

CONSERVATION STATUS: DD. Data deficient.



ETYMOLOGY: From the Latin, *ramosissimus*- much branched, in reference to the much branched plant habit, a common feature in the Ramosum Group.

REFERENCES: Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Vol. III, Missouri Botanical Garden, p. 158.



EPIDENDRUM RESTREPOANUM A.D.Hawkes — Plate 979

EPIDENDRUM RESTREPOANUM A.D.Hawkes, Orquídea (Río de Janeiro) 18(5): 177. 1957.

Basionym: *Epidendrum coccineum* Rchb.f., Bonpl. 3: 68. 1855. Type: COLOMBIA: Norte de Santander: Ocaña, San Pedro, 5000 ft, ***Wagener s.n.*** Holotype: W-R 42442! (Illustration voucher.) Non *E. coccineum* Jacq. = *Maxillaria coccinea* (Jacq.) L.O.Williams. ex Hodge.

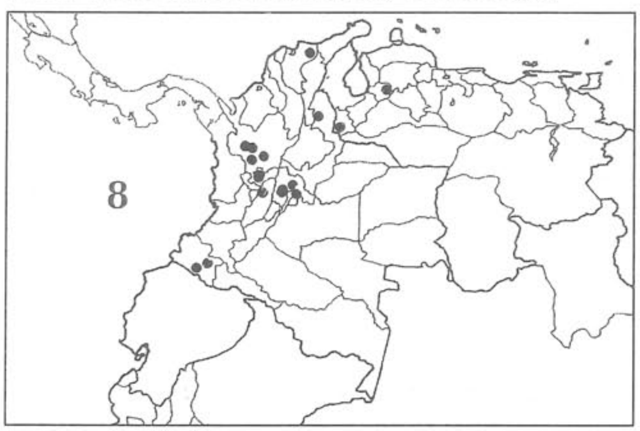
Hierba epífita, monopodial, ramificada, erecta, ca. de 45 cm de alto. **Raíces** producidas en la base del tallo basal, delgadas. **Tallos** ramificados, tipo caña, teretes, rectos, delgados, los nuevos tallos producidos de cerca del ápice del tallo anterior, 10-45 x 0.3-0.6 cm. **Hojas** 3-6, distribuidas hacia la mitad apical de los tallos, alternas, subcoriáceas; vaina tubular finamente estriada y levemente rugosa cuando seca, 1-2 x 0.3-0.6 cm; lámina oblongo lanceolada, ápice bilobado, con una quilla dorsal baja, margen entero, [2.5]4.2-5.6 x 0.4-0.7[0.9] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, corta, 2 cm de largo; pedúnculo terete, delgado, desprovisto de brácteas, muy corto. **Brácteas florales** cerca de la mitad del largo del ovario, angostamente triangulares, acuminadas, abrazadoras, 5 mm de largo. **Flores** 6-13, resupinadas, simultáneas, color rojo carmesí, coccineo, el labelo y la columna amarillos; sin fragancia. **Ovario** terete, delgado, liso, no inflado, 6-10 mm de largo. **Sépalos** entreabiertos, libres, carnosos, 3-nervados, dorsalmente pustulados, margen entero; el **dorsal** elíptico, ápice redondeado, 6-7.7 x 4-5.1 mm; los **laterales** obovado elípticos, subagudos, 7-9 x 4.2-4.8 mm. **Pétalos** entreabiertos, libres, carnosos, angostamente elípticos, oblicuos, subagudos, 3-nervados, las nervaduras laterales cortas, margen ligeramente eroso hacia la mitad apical, 6.8-7.5 x 3.7-4.6 mm. **Labelo** libre en la mitad apical, (unido a la columna sólo en la mitad basal) incipientemente trilobado, profundamente cordado en la base, margen eroso, 7-7.4 x 8-9 mm; ecalloso; provisto con 5-7 quillas, romas, lisas, las tres centrales paralelas, alargadas hasta la base del lóbulo medio, las laterales más cortas, radiantes; lóbulos laterales pequeños, dolabriformes, redondeados, 2.4 x 5 mm; lóbulo medio ancho y corto, ligeramente emarginado, 2 x 5 mm. **Columna** libre en la mitad apical, ligeramente arqueada, corta, gruesa, ventralmente provista de un par de alas redondeadas, no involutas, 4-5 mm de largo. **Clinandrio** corto, entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, desiguales; caudículas suaves y granulosas, más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ½ del ovario, delgado, liso, no inflado. **Cápsula** elipsoide, pedicelo corto, terete, 7 mm de largo; cuerpo 23 x 17 mm; cuello apical, 6 mm de largo.

Epiphytic, monopodial, branching, erect **herb. Roots** produced from the base of the basal stem, thin. **Stems** branching, cane-like, terete, straight, thin, the new stems produced from near the apex of the earlier stem. **Leaves** 3-6, distributed towards the upper half of the stem, alternate, subcoriaceous; sheath tubular, minutely striated and slightly rugose when dry; blade oblong-lanceolate, apex bilobed, with a low dorsal keel, margin entire. **Inflorescence** apical, flowering only once, racemose, arching-nutant, short; peduncle terete, thin, very short. **Floral bracts** about half as long as the ovary, narrowly triangular, acuminate. **Flowers** 6-13, resupinate, simultaneous, carmine-red, coccineous, the lip and column yellow. **Ovary** terete, thin, smooth, not inflated. **Sepals** partly spreading, free, fleshy, dorsally pustulate, 3-veined, margin entire; the dorsal sepal elliptic, apex rounded, the lateral sepals obovate, elliptic, subacute. **Petals** partly spreading, free, fleshy, narrowly elliptic, oblique, subacute, 3-veined, the lateral veins short, margin slightly erose towards the apical half. **Lip** partly united to the column, the basal half, slightly 3-lobed, base deeply cordate, margin erose; ecallose, provided with 5-7 rounded, smooth, low keels, the central 3 parallel, elongate to the base of the midlobe, the lateral keels shorter, radiating; lateral lobes small, dolabriform, rounded; midlobe wide and short, slightly emarginate. **Column** partly united to the column, the apical half free, slightly arching, short, thick, ventrally provided with a pair of rounded, non-involute wings. **Clinandrium-hood** short, entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, unequal; caudicles soft and granulose, shorter than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating ½ of the ovary, thin, smooth, not inflated. **Capsule** ellipsoid, pedicel short, terete, apical neck short.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread in the northern Andes, from the border between Colombia and Ecuador to Antioquia and Trujillo in Venezuela, epiphytic, between 1500-3500 m. Flowering from June to April.

RECOGNITION: *Epidendrum restrepoanum* belongs to the Diothonea Group and Subgroup, which is characterized by the branching plants, linear-lanceolate to oblong, leaves, the apex bilobed, racemose, arching-nutant inflorescence, membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose and without or with 1-10 thin, smooth to erose keels, the column completely free to obliquely united to the lip, the anther reniform. The species is recognized by the small, scarlet-red flowers, with a yellow lip and column, dorsally pustulate sepals, deeply cordate, somewhat three-lobed lip, shallowly emarginate and 5-7 keeled, the three central ones longer, and the dorsal sepal nearly as wide as it is long and round. It closely resembles *Epidendrum oxysepalum* Hágsater & E.Santiago which is superficially similar, but has smooth sepals, a subcordiform, apiculate lip with three or five parallel keels at the base, and narrow, acute sepals. It has been confused with *E. podocarpophilum* Schltr. from the province of Azuay, Ecuador, which has glabrous sepals and the apical half of the lip papillate and with three parallel keels. *Epidendrum pseudoglobiflorum* Hágsater & Dodson from around Loja, Ecuador, has trumpet-shaped, reddish flowers. *Epidendrum lophotropis* Hágsater & Dodson has pale orange flowers, 7 crested keels on the lip, with the 3 central keels strongly nodulose. *Epidendrum caesaris* Hágsater & E.Santiago has pink-yellow, translucent, flowers with dorsally pustulate sepals.



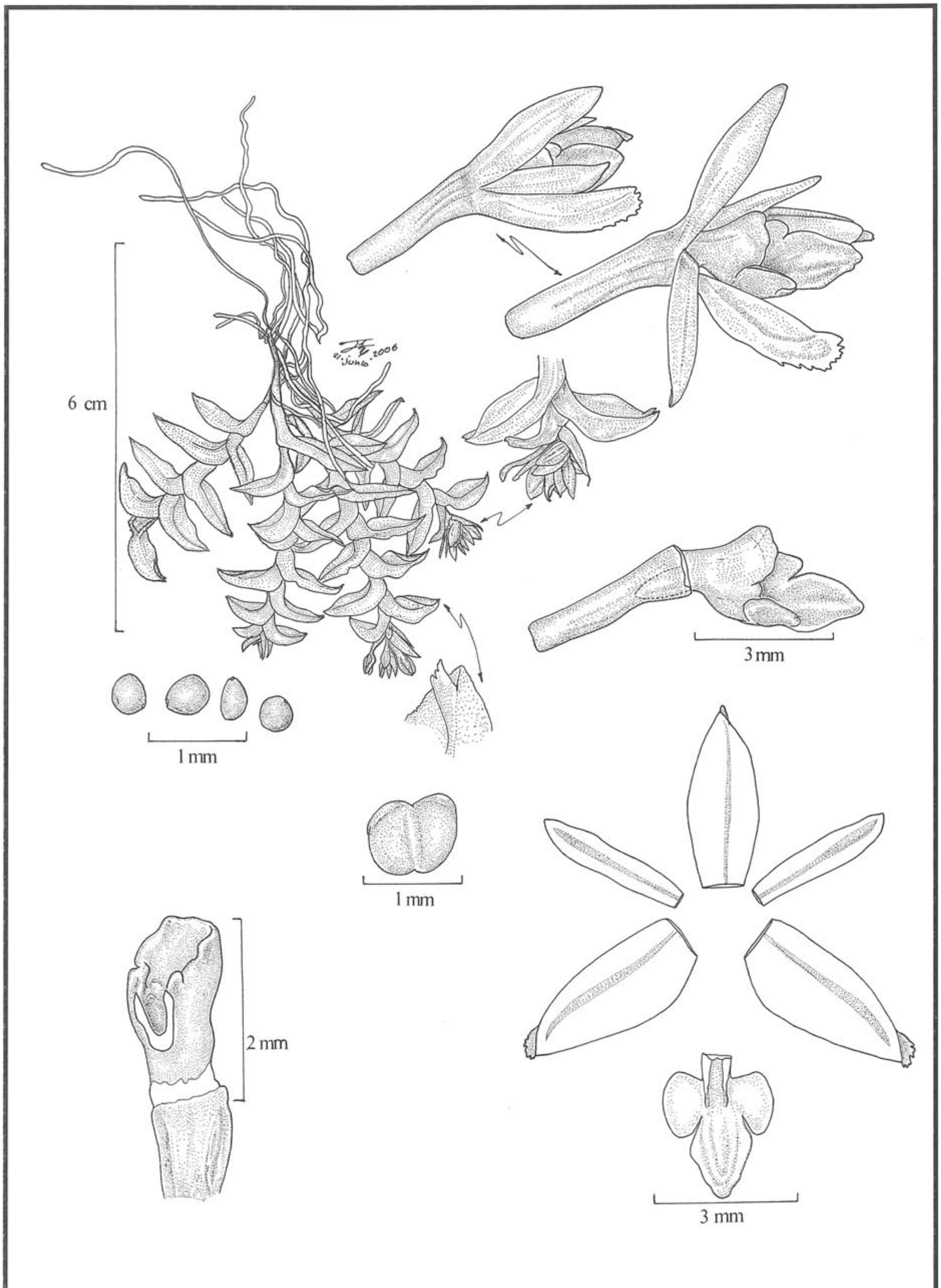
CONSERVATION STATUS: DD. Data deficient. The species seems somewhat common in Colombia, with several recent collections in adjacent Venezuela.

ETYMOLOGY: In honor of Mr. Mauricio Restrepo of Medellín, Colombia, an avid collector of orchids, ca. 1956.

REFERENCES: Escobar, R. 1994. **Orquídeas Nativas de Colombia Vol. 5**: 764, fig. 886, Medellín, Colombia. Romero, G. A., 1998, **Venezuela, Orchid Paradise**, pg. 77. Caracas, Venezuela.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM RHOMBICAPITELLATUM Hágsater & Dodson **Plate 980**

EPIDENDRUM RHOMBICAPITELLATUM Hágsater et Dodson, *sp. nov.*

Type: ECUADOR: Zamora-Chinchipe: Along road Los Encuentros to Condor, in wet forest, 12 February 1993, ***Stig Dalström 1905.*** Holotype: SEL! (Illustration voucher).

Epidendro capitellato C.Schweinf. simile sed minus, petalis oblongis, labello profunde trilobato, lobulo medio rhombeo, apice rotundato, divergens.

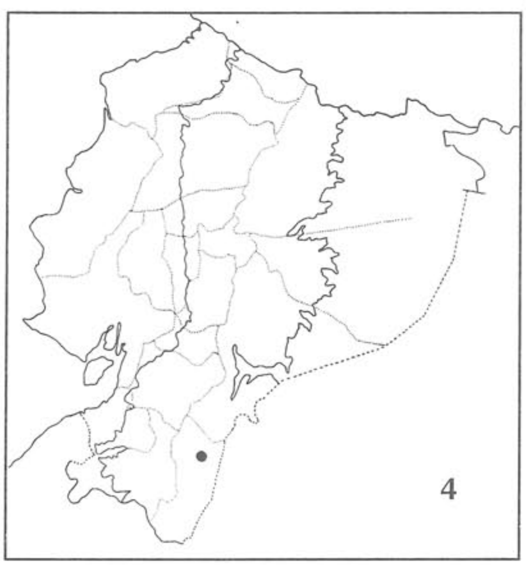
Hierba epífita, simpodial, cespitosa, colgante, ca. 5 cm de alto incluyendo la inflorescencia. **Raíces** basales, sencillas, filiformes, 0.2-0.5 mm de grosor. **Tallos** sencillos, producidos cerca de la base de los tallos anteriores, tipo caña, lateralmente aplanados, rectos, 4.5-5 x 0.1-0.3 cm. **Hojas** 9-11, distribuidas a lo largo de todo el tallo, alternas, equidistantes, extendidas, persistentes, no articuladas, presentadas en el mismo plano del tallo; vainas foliares dilatadas hacia el ápice, ancipitosas, hasta 3-4 mm de largo; lámina, angostamente ovado lanceolada, aguda, suculenta, margen apical dentado, 0.5-1.3 x 0.3-0.45 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, colgante, corta, 5-7 mm de largo, florece una sola vez; pedúnculo sésil; raquis totalmente oculto por las brácteas florales. **Brácteas florales** más largas que el ovario, triangular lanceoladas, abrazadoras, 4-5 mm de largo. **Flores** 4-5, simultáneas, resupinadas, de color verde pálido, fragancia no registrada. **Ovario** terete, delgado, ligeramente inflado ventralmente en el ápice, 3.5 mm de largo. **Sépalos** entreabiertos, libres, elíptico ovados, subagudos, aristados, 1-nervados, margen entero, extendido; el **dorsal** con una quilla dorsal baja, 3.7 x 1.4 mm; los **laterales** con la quilla dorsal prominente, aserrada hacia el ápice, ligeramente oblicuos, 4 x 1.6 mm. **Pétalos** entreabiertos, libres, oblongos, obtusos, 1-nervados, margen entero, extendido, 3 x 0.7 mm. **Labelo** unido a la columna, trilobado, carnoso, la base ligeramente cordada, margen entero, extendido, 2.5 x 2.2 mm; bicalloso, los callos basales, pequeños, laminares, paralelos; lóbulos laterales transversalmente ovados, redondeados, 0.8 x 1.3 mm, lóbulo medio rómbico, extendido, ápice redondeado, 1.7 x 1.2 mm. **Columna** ligeramente arqueada hacia arriba, 2 mm de largo incluyendo el clinandrio. **Clinandrio** prominente, sobrepasando el cuerpo de la columna, margen carnoso, sinuoso. **Antera** reniforme, 4-locular. **Polinios** 4, lenticulares, lateralmente comprimidos, subiguales; caudículas no vistas. **Rostelo** subapical, hendido. **Nectario** prominente, penetrando 1/3 del ovario, algo amplio. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, pendent **herb. Stems** simple, produced from near the base of the previous stem, cane-like, laterally compressed, completely covered by evanescent, imbricating, foliaceous sheaths. **Leaves** 9-11, evenly distributed throughout the stem, non-articulate, persistent, alternate, spreading on the same plane as the stem; foliar sheaths dilated towards the apex, ancipitose; blade non-articulate, narrowly lanceolate-ovate, acute, succulent, apical margin dentate. **Inflorescence** apical, racemose, pendent, short, flowering only once, peduncle sessile, rachis totally covered by the floral bracts. **Floral bracts** longer than the ovary, triangular-lanceolate. **Flowers** 4-5, small, simultaneous, resupinate, pale green. **Ovary** terete, thin, somewhat inflated towards the apex. **Sepals** partly spreading, free, ovate elliptic, subacute, aristate, 1-veined, margin entire, spreading, the dorsal sepals with a low dorsal keel, the laterals with a prominent dorsal keel, serrate towards the apex. **Petals** partly spreading, free, oblong, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, fleshy, base slightly cordate, margin entire, spreading, with two basal, laminar parallel calli; lateral lobes transversely ovate, rounded, midlobe rhombic, spreading, apex rounded. **Column** slightly arched upwards, short. **Clinandrium-hood** prominent, surpassing the body of the column, margin fleshy, sinuose. **Anther** 4-celled, reniform. **Pollinia** 4, lenticular, laterally compressed, subequal. **Rostellum** subapical, slit. **Nectary** prominent, penetrating 1/3 the ovary, somewhat wide.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the Cordillera del Condor, in SE Ecuador near the Ecuadorean-Peruvian border, epiphytic in wet forest, at 1650 m altitude. Flowering in February.

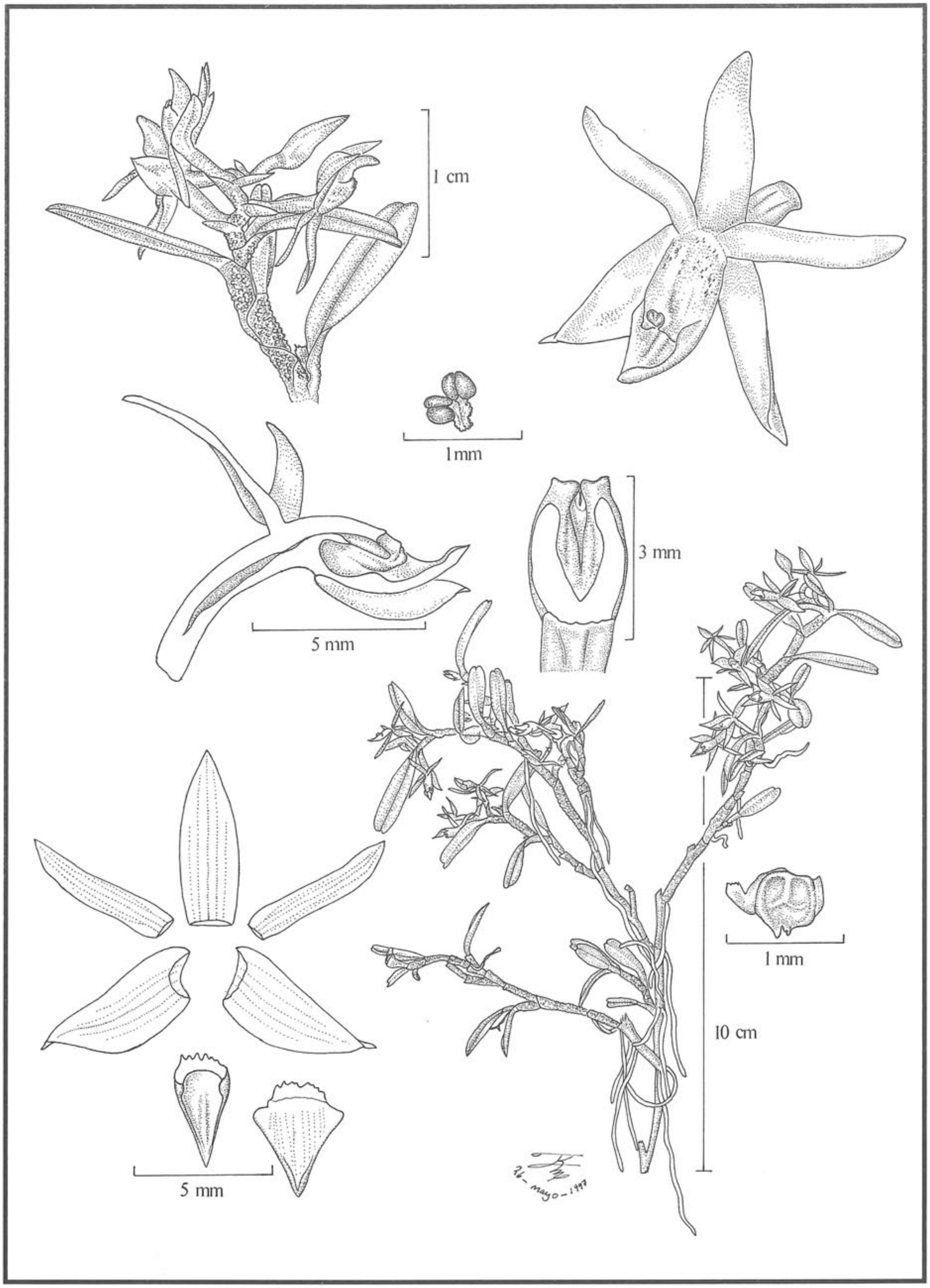
RECOGNITION: *Epidendrum rhombicapitellatum* belongs to the Capitellatum Group which is characterized by the erect or pendent, succulent stems, the non-articulate leaves, with a compact, spherical head of fleshy greenish flowers, without any spathaceous bract, and the bicallose lip, the lateral sepals with a prominent dorsal, dentate keel. The species is recognized by the small plants with short, wide leaves, the 3-lobed lip with the rhombic midlobe somewhat larger than the lateral lobes. *Epidendrum capitellatum* has taller plants, 10-25 cm tall, and a 3-lobed lip where the midlobe is smaller than the lateral lobes and emarginate, notched at the apex. *Epidendrum pterogastrium* Hágsater has plants about 10 cm high, the leaves apically decurved, and the lip entire, cordate-reniform.



CONSERVATION STATUS: DD (Data deficient).

ETYMOLOGY: From the Latin *rhombus*, diamond, and *capitellum*, head, the head of a column in reference to the diamond-shaped midlobe of the lip which differentiates this species from *Epidendrum capitellatum*.

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EPIDENDRUM RUGOSUM Ames **Plate 981**

EPIDENDRUM RUGOSUM Ames, Schedul. Orchid. 6: 74. 1923.

Type: COSTA RICA: Without locality, received at the Royal Gardens, Kew, in 1923, ***Charles H. Lankester s.n.***
Holotype: AMES 26978! Isotype: K!

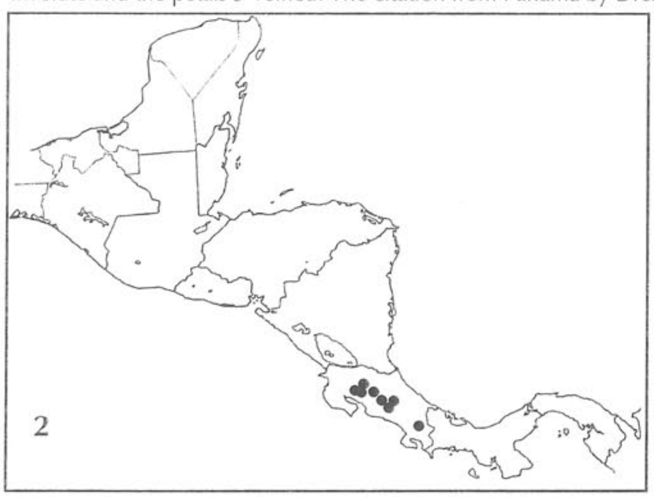
Hierba epífita, monopodial, ramificada, 15-50 cm de alto. **Raíces** basales del tallo principal y de las ramas, gruesas, 4-5 mm de grosor. **Tallos** ramificados, tipo caña, teretes, flexuosos, cubiertos completamente por vainas rugosas, hasta 40 x 0.1-0.2 cm; las ramificaciones más cortas, reduciéndose mas hacia el ápice, 2-20 x 0.05-0.1 cm. **Hojas** distribuidas a lo largo de los tallo principal y las ramas, generalmente se caen de los tallos más largos o viejos, las hojas de las ramas persistentes, en las ramas cercanas a la base 7-11, en las ramas apicales, nuevas o florales 3-5 raramente 7; vainas foliares tubulares, rugosas, 0.4-2 cm de largo; láminas foliares elíptico oblongas, desigualmente bilobadas, coriáceas 1-3 x 0.3-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, únicamente de las ramificaciones, dística, racemosa, erecta, el raquis en zigzag, no ornamentado, 1-1.5 cm de largo; pedúnculo muy reducido, terete, 2-3 mm de largo, con 1-2 brácteas, triangulares, agudas, 1.5-2.5 mm de largo. **Brácteas florales** más cortas que el ovario, triangulares, agudas, 2-2.5 mm de largo. **Flores** 4-6, simultáneas, dísticas, el labelo siempre orientado hacia el raquis, blanquecinas, blanco verdosas a verdes, fragancia no registrada. **Ovario** no inflado, terete, no ornamentado, 4.5-5 x 0.5-0.6 mm. **Sépalos** extendidos, libres, ovado elípticos, agudos, con una quilla dorsal apical, 5-nervados, glabros, margen entero, revoluto, 5-7 x 1-2 mm. **Pétalos** extendidos, libres, angostamente lanceolados, agudos, 3-nervados, con dos nervaduras secundarias, glabros, margen entero, extendido, 6-7 x 1-2 mm. **Labelo** unido a la columna, corto, carnoso, triangular, base truncada, los ángulos redondeados, ápice agudo a redondeado, margen entero, 3-4 x 2-2.5 mm; ecalloso, disco con una quilla central engrosada, y con 5 ó más venas evidentes en seco. **Columna** recta a arqueada, gruesa, 2-3 mm de largo. **Clinandrio** reducido, entero. **Antera** subesférica, con un par de protuberancias petaloides, 4-locular. **Rostelo** apical, hendido. **Polinios** 4 obovoides, lateralmente comprimidos; caudículas suaves y granulosas, semejantes en longitud a los polinios; viscidio viscoso, translúcido. **Lóbulos laterales del estigma** prominentes, ocupando más de la mitad del estigma. **Nectario** sin traspasar el perianto, inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, monopodial, branching **herb. Roots** basal on the main stem and the branches, thick. **Stems** branching, cane-like, terete, flexuous, completely covered by rugose sheaths; the branches shorter than the main stem, the upper ones progressively shorter. **Leaves** distributed throughout the main stem and the branches, generally deciduous on the longer, older stems; persistent on the branches; 7-11 on the lower branches, 3-5 on the upper and flowering branches, rarely 7; sheaths tubular, rugose; blades oblong-elliptic, unequally bilobed, coriaceous. **Inflorescence** apical, only from the branches, distichous, racemose, erect, rachis zigzag, smooth; peduncle reduced, terete, with 1-2 triangular, acute bracts. **Floral bracts** shorter than the ovary, triangular, acute. **Flowers** 4-6, simultaneous, distichous, the lip always facing the rachis, whitish, greenish white to green. **Ovary** short, not inflated, terete, smooth. **Sepals** glabrous, spreading, free, ovate-elliptic, acute, with an apical dorsal keel, 5-veined, margin revolute, entire. **Petals** glabrous, free, spreading, narrowly lanceolate, acute, 3-veined, with a pair of secondary veins, margin spreading, entire. **Lip** united to the column, short, fleshy, triangular, base truncate, corners rounded, apex acute to rounded, margin entire; ecallose, disc with a central thickened keel, and 5 or more evident veins when dry. **Column** straight to arching, thick. **Clinandrium-hood** reduced, entire. **Anther** sub spherical, with a pair of petaloid appendages, 4-celled. **Rostellum** apical, slit. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia, viscidium viscous, translucent. **Nectary** without entering the ovary, somewhat inflated, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic but widespread in Costa Rica, along the Atlantic slope and the Continental Divide on the Cordilleras of Tilarán, Central and Talamanca. Epiphytic in cloud and rainforest, at 950-2500 m altitude. Flowering from May to October.

RECOGNITION: *Epidendrum rugosum* Ames belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by its terete stems, rugose leaf-sheaths, zigzag rachis of the inflorescence, 4-6 whitish, greenish white to green flowers, sepals 5-7 mm long, 3-veined petals, the triangular, acute lip, with the basal corners rounded, very fleshy towards the apex and 5 evident veins on the disc of the lip. It is similar and sympatric with *E. atrorugosum* Hágsater which has successive flowers, the sepals about 9-10 mm long, acute, sepals and petals 3-veined, free, straight, lip about twice as long as it is broad, column bent at the base forming a nearly 90° angle with the ovary; the plants and flowers dark purple throughout. *Epidendrum suturatum* Hágsater & Dressler, endemic from Panama, and has lanceolate sepals adnate to the lip where it is joined to the column, and clearly divergent. *Epidendrum curvisepalum* Hágsater & Dressler, also endemic from Panama and which has falcate lateral sepals, the apical half strongly divergent, and the lip ovate with the margin strongly involute and the petals 5-veined. The citation from Panama by Dressler (1980) is based on either one of these species.



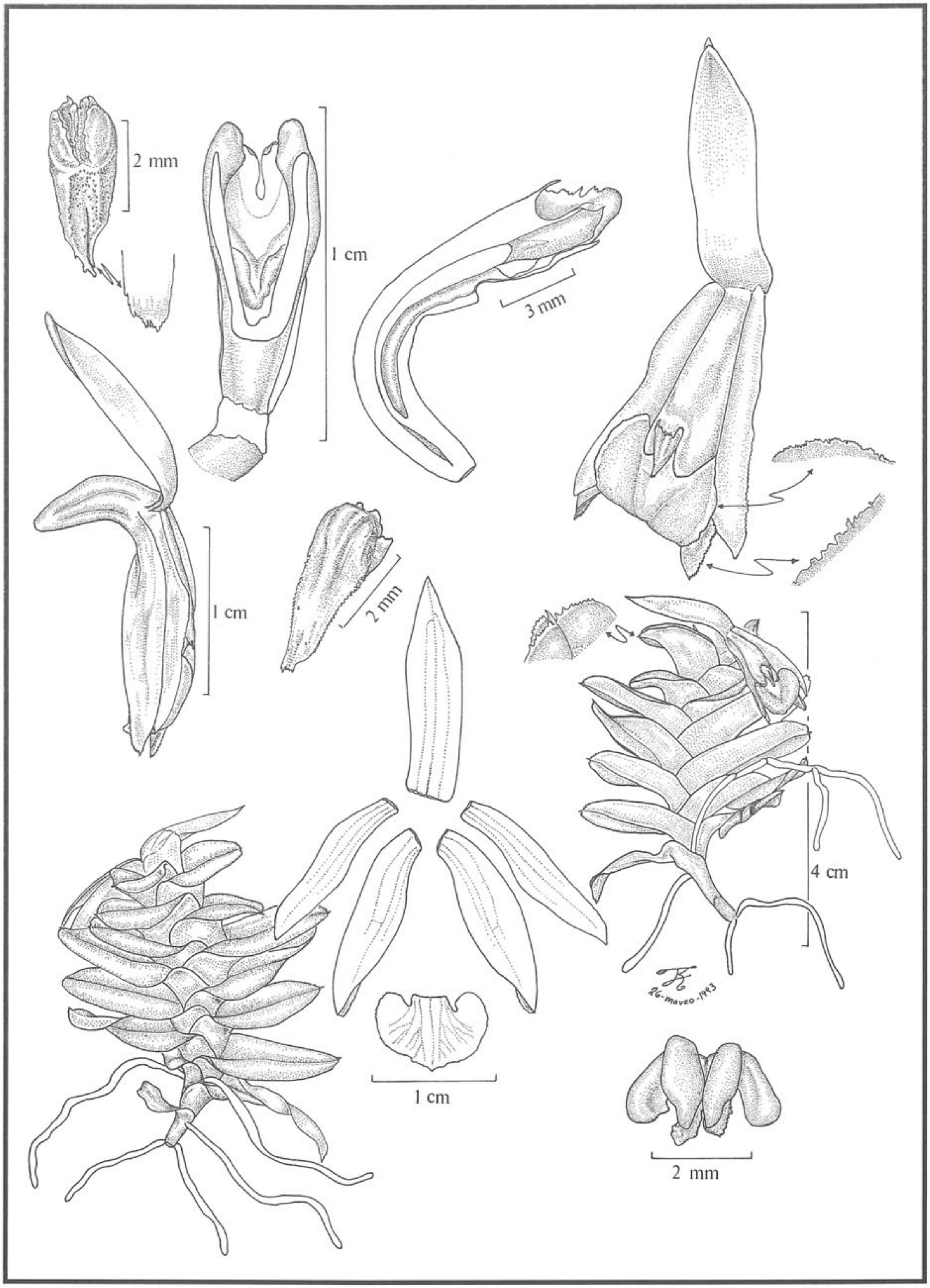
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *rugosus*- rugose, in reference to the rugose foliar sheaths.

REFERENCES: Hágsater, E., J. García-Cruz & L. Sánchez Saldaña in Hammel et al., 2003, **Manual de Plantas de Costa Rica**, 3: 160. Missouri Botanical Garden. Dressler, Robert L. 1980. Checklist of the Orchids of Panama, I-XXVI pp. in Louis O. Williams and Paul H. Allen, **Orchidaceae, *Flora of Panama***. Facsimile Reprint, Monogr. Syst. Bot. Missouri Bot. Gard., Vol. 4.

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EPIDENDRUM SCHLECHTERIANUM Ames **Plate 982**

EPIDENDRUM SCHLECHTERIANUM Ames, Schedul. Orchid. 7: 9, fig.1. 1924.

Basionym: *Epidendrum brevicaule* Schltr., Repert. Spec. Nov. Regni Veg. 7: 30. 1922. Type: PANAMA: Hills east of the [Panama] City, at sea level, ***C. W. Powell 18.*** Holotype (cited by Ames, Hubbard and C. Schweinf., 1936): B [destroyed]. Lectotype [here designated] MO! Isotype: K! Photograph of lectotype: SEL! Non *E. brevicaule* Schltr., 1921.

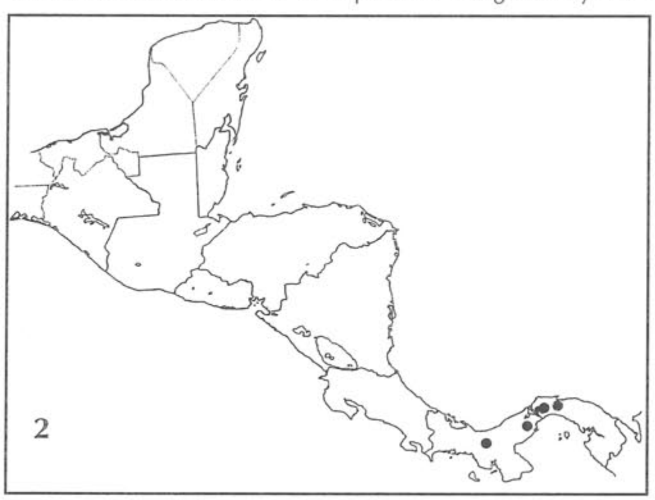
Hierba epífita, simpodial, cespitosa, compacta, 3.5-6 cm de largo. **Raíces** basales, teretes, delgadas, 0.3-0.6 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, erectos, rectos, cubiertos en su totalidad por la base de las hojas, 3-6 x 0.25-0.6 cm. **Hojas** 10-13, distribuidas a lo largo del tallo, desiguales en tamaño, extendidas, dísticas, no articuladas, suculentas; vaina tubular, lateralmente comprimida, dilatada en el ápice, 5-7 mm de largo; lámina oblonga a angostamente lanceolada, abrazadora y conduplicada en la base, obtusa, oblicuamente bilobada, con un apiculo dorsal diminuto, margen hialino, dentado en la base a dentado fimbriado en el ápice, 0.6-2.8 x 0.4-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, sésil, biflora, florece una sola vez. **Brácteas florales** algo más pequeñas que el ovario, obovadas, redondeadas, conduplicadas, 3.5-4 mm de largo. **Flores** 2, simultáneas, no resupinadas, carnosas, de color púrpura verdoso a verde oliváceas teñidas de rojizo o pardo amarillas teñidas con puntos morados; sin datos de fragancia. **Ovario** triquetro, delgado, ligeramente arqueado, no inflado, con 3 quillas lisas, el par ventral algo más prominente, 7 mm de largo. **Sépalos** oblongo lanceolados, agudos, 3-nervados, margen irregularmente dentado hacia la mitad apical, 17-20 x 3.3-5 mm; el **dorsal** ligeramente reflexo, libre, con una quilla dorsal lisa y baja, diminutamente apiculado, margen extendido; los **laterales** entreabiertos, adnados de manera oblicua a la mitad basal de la columna, oblicuos, con una quilla dorsal alta, eroso-dentada, margen algo revoluto. **Pétalos** paralelos y adnados de manera oblicua a la mitad basal de la columna, angostamente lanceolados, agudos, 3-nervados, oblicuos, margen extendido, crenado-dentado hacia el ápice, 16-18 x 2.4-2.5 mm. **Labelo** unido a la columna, entero, base cordada, cordado reniforme, diminutamente apiculado, margen irregularmente dentado, 6.5-8 x 7.5-7.8 mm; ecalloso y desprovisto de quillas. **Columna** deflexa en la base respecto al ovario, delgada, recta, terminada en un par de lóbulos laterales prominentes, carnosos, algo dirigidos hacia arriba, con el margen dentado lacerado, 10-14 mm de largo. **Clinandrio** reducido, con el margen profundamente lacerado-denticulado. **Antera** angostamente ovoide, terminada en una punta subaguda con el margen cortamente fimbriado, la superficie fuertemente papilosa, 4-locular. **Polinios** 4, desiguales, el par interior obovoide, subagudo, el par exterior piriforme, lateralmente comprimido; caudículas de la misma longitud de los polinios, suaves y granulosas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/3 del largo de la cavidad estigmática. **Nectario** penetrando ½ del ovario, no inflado, no ornamentado. **Cápsula** globosa, trialada, subsésil; cuerpo 13-14 x 11.5-13 mm; cuello apical, 8 mm de largo.

Epiphytic, sympodial, caespitose, compact **herb. Roots** basal, terete, thin. **Stems** simple, cane-like, laterally compressed, erect, straight, totally covered by the base of the leaves. **Leaves** 10-13, distributed throughout the stem, unequal in size, spreading, distichous, non-articulate, succulent; sheath tubular, laterally compressed, dilated at the apex; blade oblong to narrowly lanceolate, amplexicaul and conduplicate at the base, obtuse, obliquely bilobed, with a minute dorsal apicule, margin hyaline, dentate at the base to dentate-fimbriate towards the apex. **Inflorescence** apical, sessile, two-flowered, flowering only once. **Floral bracts** somewhat shorter than the ovary, obovate, rounded, conduplicate. **Flowers** 2, simultaneous, non-resupinate, fleshy, greenish purple to olive-green tinged with reddish, or yellow-brown, tinged with purple dots. **Ovary** triquetrus, thin, slightly arching, not inflated, with 3 smooth keels, the ventral pair somewhat more prominent. **Sepals** oblong-lanceolate, acute, 3-veined, margin irregularly dentate towards the apical half; dorsal sepal slightly reflexed, free, with a low, smooth dorsal keel, minutely apiculate, margin spreading; the lateral sepals partly spreading, obliquely adnate to the basal half of the column, oblique, margin somewhat revolute, with a high, erose-dentate dorsal keel. **Petals** parallel and obliquely adnate to the basal half of the column, narrowly lanceolate, acute, 3-veined, oblique, margin spreading, crenate-dentate towards the apex. **Lip** united to the column, entire, base cordate, cordate-reniform, minutely apiculate, margin irregularly dentate; ecallose and without keels. **Column** deflexed at the base with respect to the ovary, thin, straight, ending in a pair of prominent lateral, fleshy lobes, directed somewhat upwards, the margin dentate-lacerate. **Clinandrium-hood** reduced, the margin deeply lacerate-denticulate. **Anther** narrowly ovoid, ending in a subacute point with the apical margin short-fimbriate; the surface strongly papillose, 4-celled. **Pollinia** 4, unequal, the inner pair obovoid, subacute, the outer pair piriform, laterally compressed; caudicles as long as the pollinia, soft and granulose. **Rostellum** subapical, slit. **Nectary** penetrating ½ of the ovary, not inflated, smooth. **Capsule** globose, 3-winged, subsessile, with an apical neck.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to central Panama, epiphytic, from sea level to 360 [700-900] m altitude. Flowering from November to February.

RECOGNITION: *Epidendrum schlechterianum* belongs to the Nanodes Group, characterized by the caespitose to creeping, sympodial plants, the short stems completely covered by the base of the non-articulate, fleshy, imbricating leaves; sessile, few-flowered inflorescences. The species is recognized by the two-flowered inflorescence with relatively long, greenish purple to olive green flowers tinged with red, the oblong-lanceolate, 17-20 mm long sepals, cordate-reniform, minutely apiculate lip, and the column 10-14 mm long with the anther elongate, subacute and apically fimbriate. *Epidendrum congestum* Rolfe has 2-3, much smaller flowers (sepals 7-10 mm long) and the lip cordiform, with the apex acute, and the anther widely ovoid and apically truncate, the margin something dentate. *Epidendrum congestoides* Ames & C.Schweinf. also has a two-flowered inflorescence, but the flowers are smaller, greenish to reddish green, sepals ovate to ovate-lanceolate, 8-10[13] mm long, the lip reniform-semiorbicular, somewhat embracing the short column (4.5-5.8 [6.6] mm long) in natural position, and the anther is short, the margin fimbriate.



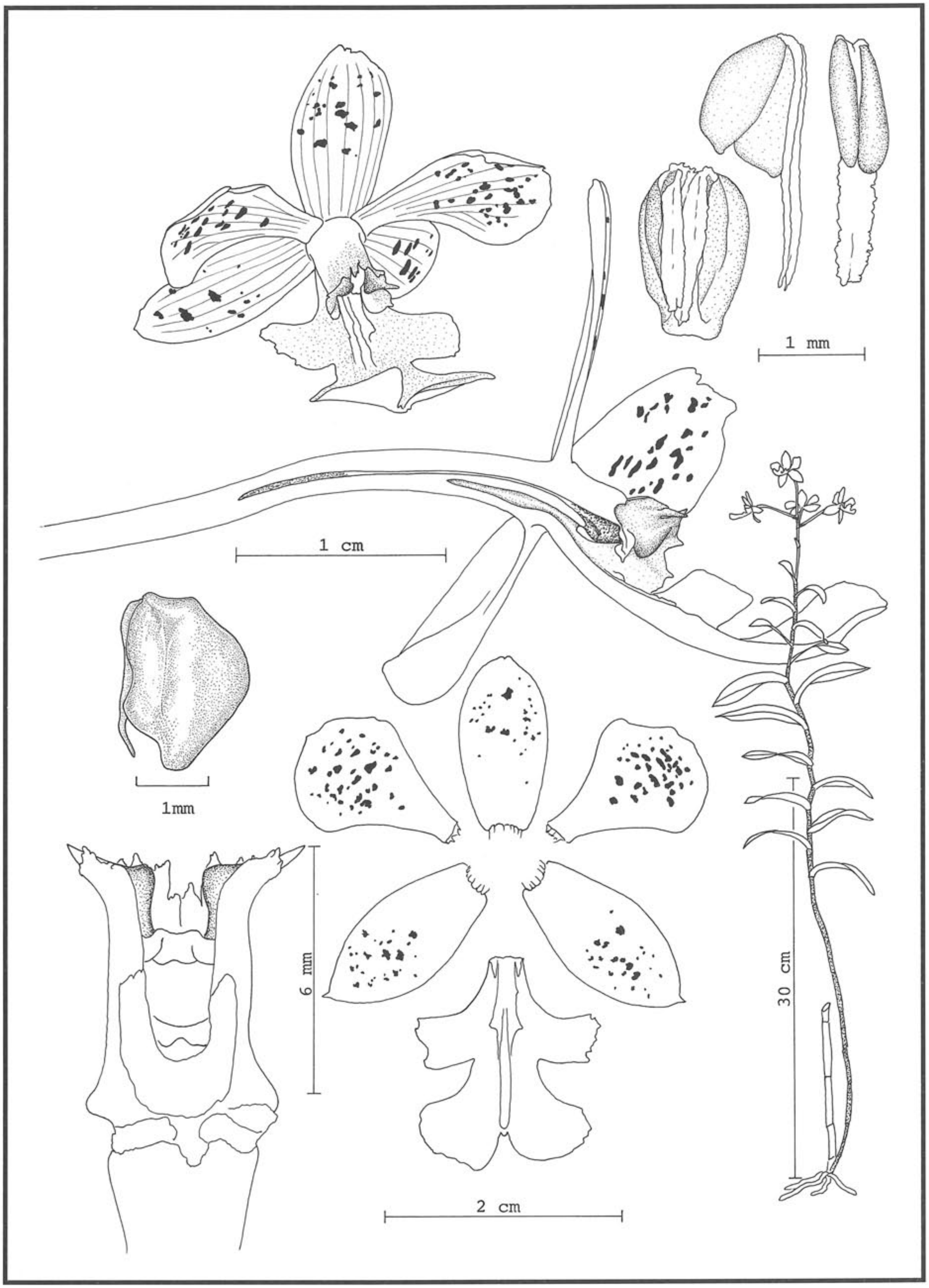
CONSERVATION STATUS: DD. Data deficient. An endemic species of Panama.

ETYMOLOGY: In honor of Rudolf Schlechter the German orchidologist of the early 20th Century, who described numerous orchids the world over, including many from tropical America.

REFERENCES: Ames, O., F.T. Hubbard & C. Schweinfurth, 1936. **The genus *Epidendrum* in the United States and Middle America**, p. 171-172.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM SCHUMANNIANUM Schltr.

Plate 983

EPIDENDRUM SCHUMANNIANUM Schltr., Repert. Spec. Nov. Regni Veg. 9: 215. 1911.

Type: COSTA RICA: Without locality, 1903, ***C. Wercklé s.n.*** Holotype: B, destroyed, tracing at AMES! Neotype: COSTA RICA: [Alajuela:] Sarapiquí, between Cariblanco and San Miguel, 500-800 m, ***C. K. Horich 61P1531***, UCLA! [Designated by Fowlie, Orch. Digest 33(8): 254. 1969.]

Synonym: *Oerstedella schumanniana* (Schltr.) Hágsater, Orquídea (Mexico City) 8(1): 24. 1981.

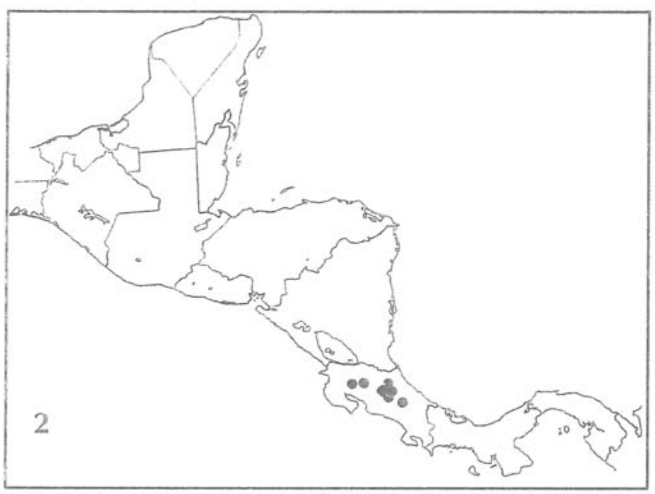
Hierba epífita, cespitosa, simpodial; 35-120 cm de alto. **Raíces** basales, carnosas, gruesas, blancas; 2-5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, erectos; 30-80 x 0.15-0.8 cm; cubiertos en la base por vainas tubulares verrugosas, no foliares; 25-50 mm de largo. **Hojas** 10-15, distribuidas a lo largo de la mitad superior tallo, alternas, articuladas, las basales caedizas; vainas tubulares, prominentemente verrugosas, las verrugas púrpura grisáceo; 8-35 x 1.5-8 mm; lámina angostamente oblonga a oblongo elíptica, el ápice obtuso, subcoriácea, margen entero; 3.2-8.3 x 1.1-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical o lateral, racemosa a paniculada (la panícula compuesta por 3-6 racimos cortos, paucifloros, con una bráctea basal, triangular lanceolada que se torna foliácea en los racimos basales), erecta, multiflora, laxa; 10-20 cm de largo; pedúnculo terete, delgado, desprovisto de brácteas, ca. 14 mm de largo. **Brácteas florales** mucho más cortas que el ovario, lanceoladas, agudas, abrazadoras; 2-4 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado; 20-25 mm de largo. **Flores** 22 a 32, 4-7 por racimo, muy llamativas, simultáneas, resupinadas; sépalos y pétalos de color violeta azulosos a rosado claros tornándose amarillo verdosos con el tiempo (generalmente con manchas violeta azulosas a rojo pardas en la superficie ventral); el labelo lila rosado con venas o manchas de color violeta; callo amarillo; fragancia especiada, verde. **Sépalos** extendidos, libres, carnosos, obovado elípticos, ápice redondeado, diminutamente apiculados, 7-nervados, margen entero; 12-16 x 6-8 mm. **Pétalos** extendidos, libres, espatulados, obtusos, 5-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 7-nervados, margen apical eroso; 12-16 x 6-11 mm. **Labelo** unido a la columna, 3-lobado, unguiculado; 9-17 x 8-15.5 mm; bicalloso, los callos delgados, agudos, con el ápice ligeramente divaricado; disco provisto de una 3 quillas delgadas, la central alargada cerca del ápice del lóbulo medio, el par lateral más corto; lóbulos laterales lanceolado falcados a subrectangulares, subagudos, margen lateral ligeramente ondulado; 3-5 x 2-4 mm; lóbulo medio con un istmo angosto en la base, emarginado, bilobado en el ápice, los lóbulos subcuadrados, con el margen apical eroso; 8-9 x 8-14 mm. **Columna** gruesa, recta, levemente dirigida hacia arriba a la altura del clinandrio, margen lacerado, 6-8 mm de largo. **Clinandrio** corto, bilobado, con un par de lóbulos laterales deltoides, muy carnosos a la altura de la antera, margen lacerado. **Antera** obovoidea, ápice truncado, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más largas que los polinios; sin viscidio. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando 1/5 del ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic, caespitose, sympodial **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, erect; the lower part covered by non-foliaceous verrucose, tubular sheaths. **Leaves** 10-15, distributed throughout the upper half of the stem, alternate, articulate, the lower ones deciduous; sheaths tubular, prominently verrucose, the warts grayish purple; blade narrowly oblong to oblong-elliptic, the apex obtuse, subcoriaceous, margin entire. **Inflorescence** apical or lateral, lax, many-flowered, racemose to paniculate, the panicle formed by 3-6 short, few-flowered racemes, erect, **Floral bracts** much shorter than the ovary, lanceolate, acute. **Ovary** terete, thin, smooth. **Flowers** 22 to 32, 4-7 per raceme, very showy, simultaneous, resupinate; sepals and petals bluish violet to light pink, turning greenish yellow with time, generally with darker spots on the backside; the lip pink-lilac with violet veins or spots; callus yellow; fragance spicy, green. **Sepals** spreading, free, fleshy, obovate-elliptic, apex rounded, minutely apiculate, 7-veined, margin entire. **Petals** spreading, free, spatulate, obtuse, 5-veined, the lateral veins branching from the base so as to appear 7-veined, apical margin erose. **Lip** united to the column, 3-lobed, unguiculate; bicallose, the callus thin, acute, with the apex divaricate; disc provided with 3 narrow keels, the central keel elongate to near the center of the midlobe; lateral lobes lanceolate-falcate to subrectangular, subacute, lateral margin somewhat undulate; midlobe with a narrow isthmus at the base, emarginate, bilobed at the apex, the lobes subquadrate, apical margin erose. **Column** thick, straight, apical sides somewhat funnel-shaped, apical margin lacerate. **Clinandrium-hood** short, bilobed, with a pair of very fleshy, deltoid lateral lobes at the apex, margin lacerate. **Anther** obovoid, apex truncate, 4-celled. **Pollinia** obovoid, laterally compressed; caudicles longer than the pollinia; without any viscidium. **Rostellum** perpendicular to the axis of the column, forming a wide sinus. **Nectary** penetrating 1/5 of the ovary, smooth.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known only from the Atlantic slope of the Cordillera Central in Costa Rica, epiphyte, 250-1100 m de altitud. Flowering from February to September.

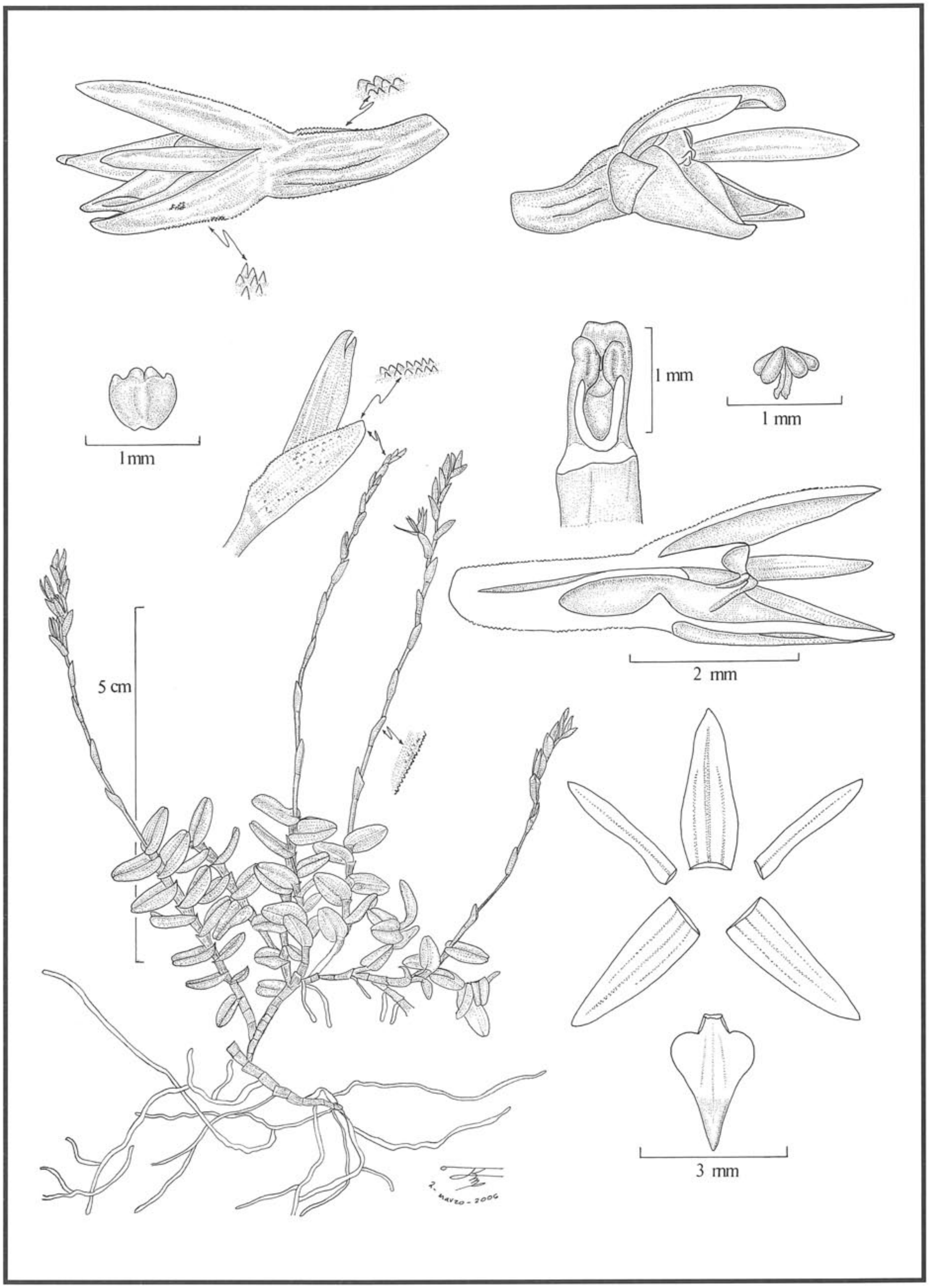
RECOGNITION: *Epidendrum schumannianum* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is perpendicular to the axis of the column instead of parallel, forming a wide, open sinus, and without a viscidium, and the Wallisii Subgroup which has large, fleshy flowers, the lip entire to 3-lobed with the midlobe bilobed, clinandrium hood petaloid, the subequal pollinia obovoid, laterally compressed, and long, granulose caudicles. The species is recognized by the attractive, bluish violet flowers with blue spots or reddish brown, the lip pink-lilac with violet veins or spots; the lateral lobes of the lip lanceolate-falcate or subrectangular, and restricted in Costa Rica. It is morphologically very similar to *Epidendrum pseudoschumannianum* Fowlie, which has the sepals dorsally blue-violet, with the inner side pale orange with dense, reddish brown spots, and the lip violet with the borders whitish and apparently endemic to the Pacific slope in central Panama, in the Valle de Antón.



CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: In honor of K. Schumann, who sent the plant to Rudolph Schlechter.
REFERENCES: Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 91. Hágsater, E., in Hammel et al., 2003, **Manual de Plantas de Costa Rica** 3: 352, Missouri Botanical Garden. Hágsater, E., & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. From *Oerstedella* Rchb.f, **Lankesteriana** 5(1): 73.

Authors: E. Santiago & E. Hágsater Illustrator: E. Hágsater Editors: E. Hágsater & L. Sánchez S.

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EPIDENDRUM SELAGINELLA Schltr.

Plate 984

EPIDENDRUM SELAGINELLA Schltr., Repert. Spec. Nov. Regni Veg. Beih. 3: 48. 1906.

Type: COSTA RICA: An feuchten Felsen auf dem Recreo, am Wege von Carrillo, c. 1200 m, Juli 1888, ***J. Cooper 523***. Holotype: US 579506! Photo AMES!
Synonym: *Microepidendrum selaginella* (Schltr.) Brieg. (nom. illeg.), in Schlechter, Orchideen, 3 ed., 9(33-36): 557. 1977.

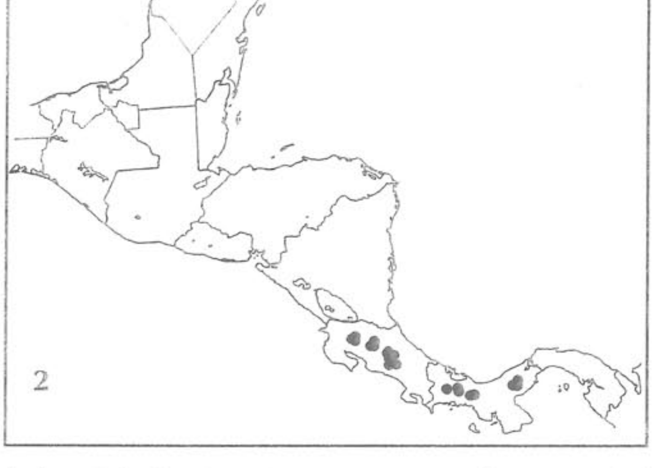
Hierba epífita, simpodial, cespitosa, 6-11.5 cm de alto. **Raíces** originándose en la base de cada tallo, muy delgadas, carnosas, blancas, 0.1-0.45 mm de grosor. **Tallos** sencillos, producidos del 2-3 entrenudo del tallo anterior, tipo caña, teretes en la base y lateralmente aplanados arriba, delgados, erectos, rectos, 2.5-4.2 x 0.04-0.14 cm. **Hojas** [4]8-12, distribuidas a todo lo largo del tallo, dísticas, alternas, articuladas, equidistantes, comúnmente erecto extendidas o raramente arqueadas hacia arriba cuando secas, amplexicaules; vainas tubulares, infundibuliformes, lateralmente aplanadas, finamente estriadas, 1.2-3.5 x 0.4-1.4 mm; con una lígula muy evidente del lado opuesto de la lámina, triangular, subaguda, conduplicada, 0.4-0.7 mm de largo; lámina ovada a oblongo ovada, obtusa, desigualmente bilobada en el ápice, coriácea, con una quilla dorsal diminuta, margen extendido a ligeramente revoluto, entero, 3-7 [9] x 1.4-3.4 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, erecta, elongada, 3.3-8 cm de largo; pedúnculo alargado, filiforme, recto, 22-45 mm de largo; provisto (a todo lo largo) de 2-5 brácteas semejantes a las florales, tubulares en la base, agudas en el ápice, papilosas, 3-6 mm de largo; raquis recto, con las flores agrupadas densamente hacia el ápice. **Brácteas florales** más cortas a más largas que el ovario, conduplicadas, ovadas, agudas, abrazadoras, densamente papilosas, 3.5-4.2 mm de largo. **Ovario** corto, terete, delgado, algo inflado hacia el ápice sin formar vesícula, densamente papiloso, 3-4 mm de largo. **Flores** 5-7, simultáneas, no resupinadas, dísticas, verde pálido, amarillas o amarillo verdosas; sin datos de fragancia. **Sépalos** entreabiertos, libres, angostamente triangulares, agudos, carnosos, dorsalmente densamente papilosos, 3-nervados, margen extendido, entero, 3.4-3.8 x 1.1-1.4 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear oblanceolados, redondeados, glabros, 1-nervados, margen extendido, entero, 3.1-3.3 x 0.2-0.3 mm. **Labelo** unido a la mitad basal de la columna, entero, triangular cordado, ligeramente más largo que ancho, algo cóncavo en la base, abrazando a la columna en posición natural sin envolverla por completo, ápice agudo y carnoso, 2.4-2.5 x 1.8-2.3 mm; ecalloso y desprovisto de quillas, con 3 venas engrosadas bajas. **Columna** libre en la mitad apical, corta, recta, gruesa, el ápice con un par de dientes laterales agudos que sobresalen más allá del clinandrio, 1.0-1.3 mm de largo. **Clinandrio** reducido, margen ligeramente crenado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas granulosas, del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando 1/3 del ovario, estrecho a la altura del perianto, amplio, algo inflado, no ornamentado. **Cápsula** elipsoide, papilosa, con el perianto persistente, pedicelo sésil; cuerpo 4.5-6 x 2.3-2.8 mm; cuello apical obsoleto.

Epiphytic, sympodial, caespitose **herb**. **Roots** originating from the base of each stem, filiform, fleshy, white. **Stems** simple, produced from the 2-3rd internode of the previous stem, cane-like, terete at the base, laterally compressed above, thin, erect, straight. **Leaves** [4]8-12, equally distributed throughout the stem, distichous, alternate, articulate, generally erect-spreading or rarely arquate upwards when dry, amplexicaul; sheaths tubular, infundibuliform, laterally compressed, minutely striated; with a very evident apical ligule opposite the blade, triangular, subacute, conduplicate; blade ovate to oblong-ovate, obtuse, unequally bilobed at the apex, coriaceous, with a minute dorsal keel, margin spreading to slightly revolute, entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, erect, elongate; peduncle elongate, filiform, straight, provided throughout with 2-5 bracts similar to the floral bracts, tubular at the base, acute at the apex, papillose; rachis straight, the flowers densely aggregate towards the apex. **Floral bracts** shorter to longer than the ovary, conduplicate, ovate, acute, amplexicaul, densely papillose. **Ovary** short, terete, thin, somewhat inflated towards the apex, densely papillose. **Flowers** 5-7, simultaneous, non-resupinate, distichous, pale green, yellow or greenish yellow. **Sepals** partly spreading, free, narrowly triangular, acute, fleshy, dorsally densely papillose, 3-veined, margin spreading, entire; the lateral sepals slightly oblique. **Petals** partly spreading, free, linear-oblanceolate, rounded, glabrous, 1-veined, margin spreading, entire. **Lip** united to the basal 1/2 of the column, entire, triangular-cordate, slightly longer than wide, somewhat concave at the base, embracing the column in natural position without covering it, apex acute and fleshy; ecallose and without keels, with 3-thickened, low, veins. **Column** short, thick, the apical half free from the lip, apex with a pair of acute, lateral teeth that surpass the clinandrium-hood. **Clinandrium-hood** reduced, margin slightly crenate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles granulose, twice as long as the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, narrowed at the perianth, the wide, somewhat inflated, smooth. **Capsule** ellipsoid, papillose, the perianth persistent, pedicel sessile, apical neck obsolete.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Common and widespread from western Costa Rica to central Panama; epiphytic at [650] 1000-2400 [3200] m altitude. Flowering from March to October.

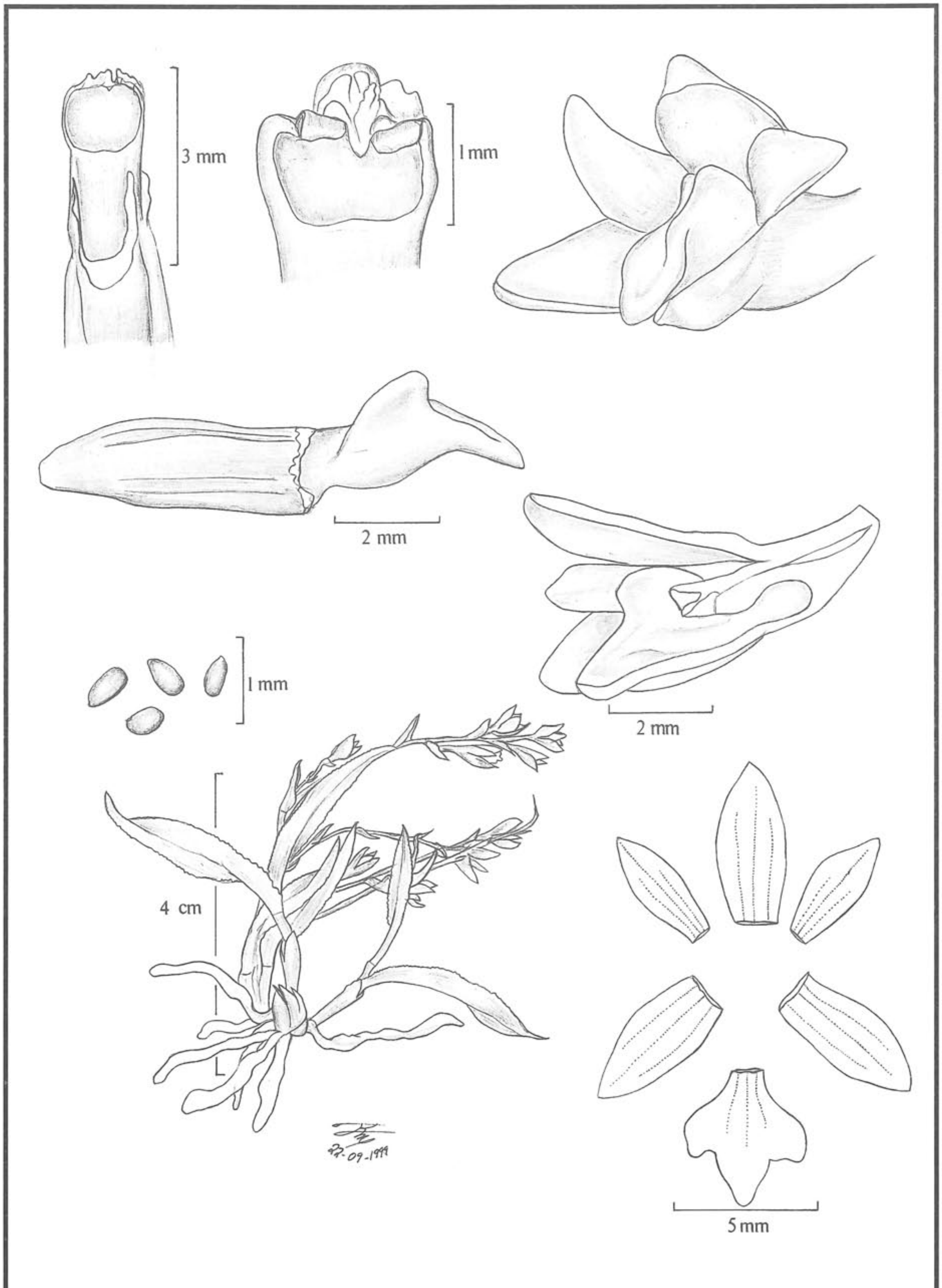
RECOGNITION: *Epidendrum selaginella* Schltr. belongs to the Epidanthus Group which is characterized by short small, usually scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the 4 pollinia, stems which are laterally compressed above, ovate to oblong-ovate leaves, the flowers aggregate at the end of a long inflorescence, and the sepals dorsally papillose, as well as the ovary and the floral bracts, the triangular-cordate lip longer than wide united to the basal half of the column. *Epidendrum stenoselaginella* Hágsater & E.Santiago also with 4 pollinia, has terete stems covered with narrow, linear-lanceolate leaves, flowers laxly distributed on the inflorescence, ovate-triangular sepals, and the triangular-cordate lip nearly as wide as it is long, united to the column throughout its length, and the ovary and sepals glabrous. *Epidendrum astroselaginella* Hágsater & E.Santiago also has 4 pollinia, and is recognized by the spreading , star-shaped, floral segments, the larger flowers (sepals 3.5-4.2 mm long), very thin petals, and prominent teeth at the apex of the column, which are directed somewhat upwards, in front of the anther-bed. Most other species in this group have 2 pollinia.



CONSERVATION STATUS: DD. Data deficient. Apparently common and widespread, found in protected areas.

ETYMOLOGY: from the Greek σελαγινελλα, moss-like in reference to the appearance of the short stemmed plants which sometimes form large matts that look like moss.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM SERRULATUM Sw.

Plate 985

EPIDENDRUM SERRULATUM Sw., Podr. Veg. Ind. Occ. 121. 1788.

Type: JAMAICA: Summit Mont Coral, ***Swartz s.n.*** BM! Isotype: W! Original illustration at S (copy at BM!). Synonyms: *Cymbidium serrulatum* Sw., Nov. Act. Upsal. 4: 72. 1799. *Encyclia serrulata* (Sw.) H.Dietricht, Rev. Jard. Bot. Nac. La Habana 5(1): 49. 1984. *Prosthechea serrulata* (Sw.) W.E.Higgins, Phytologia 82: 380. 1997. *Microepidendrum serrulatum* (Sw.) F. Brieger (nom. illeg.), in Schlechter, Orchideen, 3 ed., 9(33-36): 557. 1977.

Hierba epífita, simpodial, cespitosa, de 3-11 cm de largo. **Raíces** gruesas, largas y blanquecinas, hasta 3 mm de grosor. **Tallos** cortos, teretes en la base y algo aplanados hacia el ápice, surcados, 3.1-9 x ca. 0.1 cm, envueltos por 1-3 vainas tubulares, escarioso fibrosas cuando jóvenes portando varias hojas alternas caedizas, permaneciendo sólo una. **Hojas** 1-2, apicales, sésiles, conduplicadas, estrechamente elíptico lineares, agudas a subobtusas, mucronadas, serruladas, coriáceas, quilladas, 2.3-7.8 x 0.3-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** racemosa a paniculada, apical, 2-6 cm de largo; pedúnculo terete, muy corto, ebracteado. **Brácteas florales** más cortas que el ovario, ovado triangulares, cortamente acuminadas, abrazadoras, escariosas, 2-4 x 2-2.5 mm. **Flores** 5-12, sucesivas, campanuladas, amarillo verdosas a pardo rojizas. **Ovario** pedicelado, terete, inflado, 2.8-4.7 mm de largo. **Sépalo dorsal** elíptico, agudo, carnoso en el ápice, 3-nervado, 5.7 x 0.9 mm. **Sépalos laterales** ovados, ligeramente oblicuos, agudos, 3-nervados, con una carina en el dorso, 5.4 x 0.9 mm. **Pétalos** elípticos, agudos, 3-nervados, 3.4-4.5 x 1.2-1.8 mm. **Labelo** unido en la base a la columna, trilobado, conduplicado, flabelado en aspecto general, 4-4.7 x 3-4.2 mm; lóbulos laterales subtriangulares, ápice redondeado; lóbulo medio triangular, obtuso, carnoso; ecalloso, con una carina gruesa, roma, 1-2.1 x 1-2 mm. **Columna** erecta, corta, gruesa, 2.8 mm de largo. **Clinandrio** corto, margen eroso dentado. **Antera** 4-locular, subcuadrada, con una quilla al frente. **Polinios** 4, obovoides, subiguales, aplanados lateralmente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** profundo, penetra aproximadamente la mitad del ovario, formando una cavidad amplia, redondeada en el fondo. **Cápsula** globosa, 5.3-8.6 x 2.5-4.7 mm.

Epiphytic, sympodial, caespitose, short **herb. Roots** thick, long, whitish. **Stems** short, terete at the base, somewhat compressed above, sulcate, short, covered by 1-3 tubular, scarious-fibrous sheaths, with a foliaceous blade when young, these deciduous, only the apical blade remaining. **Leaves** 1-2, apical, sessile, conduplicate, narrowly linear-elliptic, acute to subobtuse, mucronate, coriaceous, dorsally keeled, margin serrulate. **Inflorescence** racemose to paniculate, apical, about as long as the leaves; peduncle terete, very short, lacking bracts. **Floral bracts** shorter than the ovary, ovate-triangular, short-acuminate, amplexicaul, scarious. **Flowers** 5-12, successive, bell-shaped, greenish yellow to red-brown. **Ovary** pedicellate, terete, inflated. **Sepals** partly spreading, fleshy, acute, 3-veined; the dorsal sepals elliptic, the lateral sepals ovate, slightly oblique, dorsally carinate. **Petals** elliptic, acute, 3-veined, wider than the sepals. **Lip** united to the base of the column, 3-lobed, conduplicate, flabellate in general outline; lateral lobes subtriangular, apex rounded; midlobe triangular, obtuse, fleshy; ecallose, with a thick, rounded keel on the disc. **Column** erect, short, thick. **Clinandrium-hood** short, margin erose-dentate. **Anther** 4-celled, subquadrate, with a keel in front. **Pollinia** 4, obovoid, subequal, laterally compressed. **Rostellum** apical, slit. **Nectary** deep, penetrating about half the ovary, forming a wide cavity, rounded at the bottom. **Capsule** globose.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from eastern Cuba, the Dominican Republic and Jamaica. Epiphytic in cloud forest, from 1000 to 2300 m altitude. Flowering throughout the year.

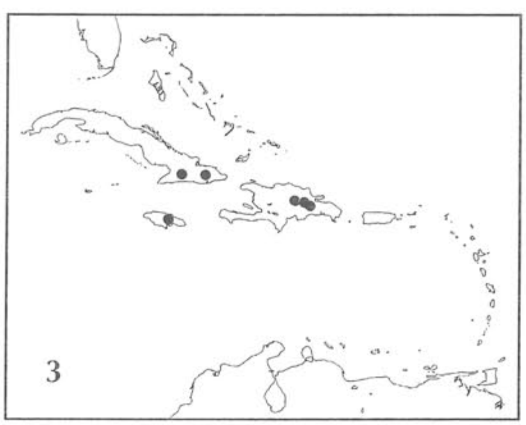
RECOGNITION: It is not clear to what group in *Epidendrum serrulatum* Sw. belongs, and we lack the corresponding DNA molecular data that would permit us to place the species, which is distinguished by the small plants compact plant with 1-2, linear-elliptic, serrulate leaves, racemose to paniculate inflorescence scarcely longer than the leaves, small, successive, campanulate, yellow-greenish to brick-red brown flowers, 3-lobed, flabellate lip, united to the column only at the base. Among the other small Antillean species, *Epidendrum hioramii* Acuña & Alain has small plants with pseudobulbs, 10 cm tall, with 2-4, ovate leaves, margin entire, 7-12 mm wide, inflorescence with 1-8, small flowers, with a widely cordiform, abruptly acuminate lip.

NOTES: The species was transferred by Dietrich to *Encyclia* on the basis of the partly free column. However, the rostellum is slit, visible when the pollinia are extracted with the viscidium. The transfer to *Prosthechea* was made automatically. Brieger's mention does not constitute valid publication, and lacks a citation of the basionym. The illustration in Nir, lacks any detail of the column.

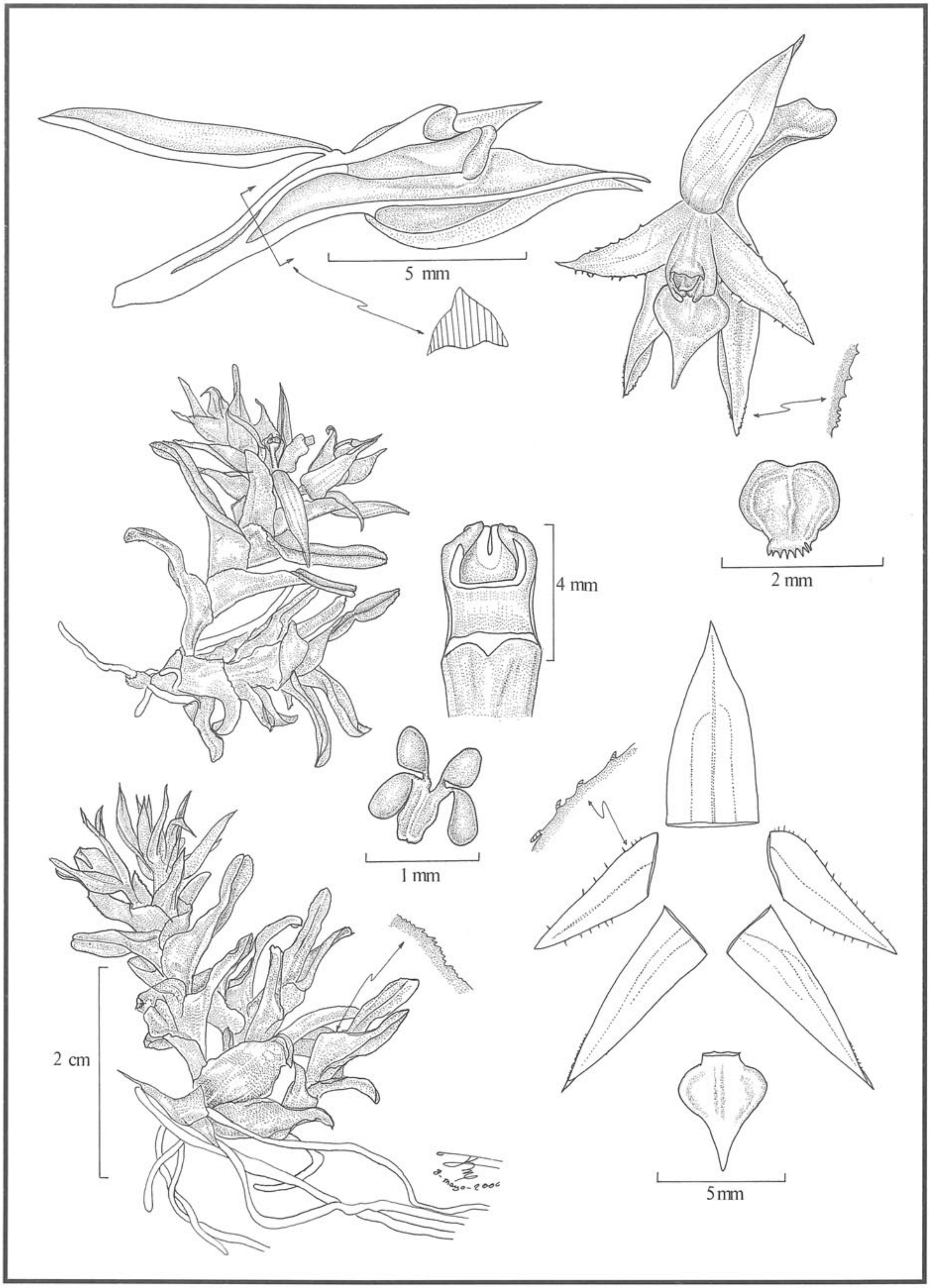
CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: From the Latin *serrula*, small saw, in reference to the dentate leaves of the species which look like small saws.

REFERENCES: Fawcett, W. & A. B. Rendle, 1982. *E. serrulatum* Sw. in **Orchids of Jamaica** 1: 98-99. Llamacho, J. A., & J. A. Larramendi, 2005. **The Orchids of Cuba**, pp 152-153. Greta Editores, Lleida, España. Nir, M. A., 2000. **Orchidaceae Antilleana**, pp. 140-141. DAG Media, New York.



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EPIDENDRUM SERRULIFERUM Schltr.

Plate 986

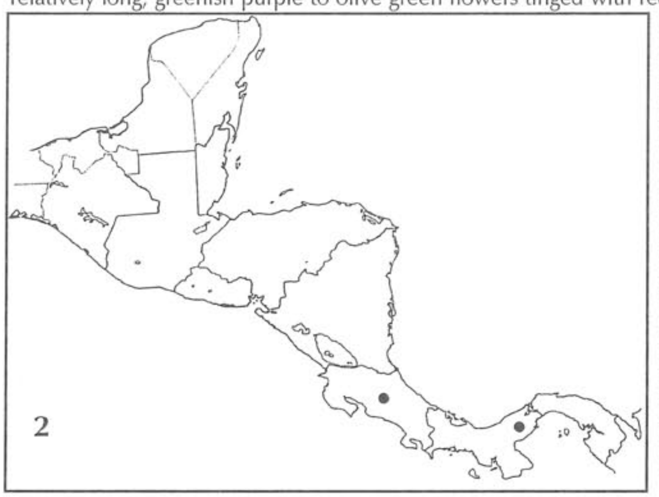
EPIDENDRUM SERRULIFERUM Schltr., Repert. Spec. Nov. Regni Veg. 19: 44. 1923.

Type: COSTA RICA: [San José: Alto de] La Palma, [ca. 1520 m,] 1922, ***C. Wercklé 114.*** Holotype: B, destroyed. Lectotype: here designated: tracing of illustration of the type, AMES 31580!

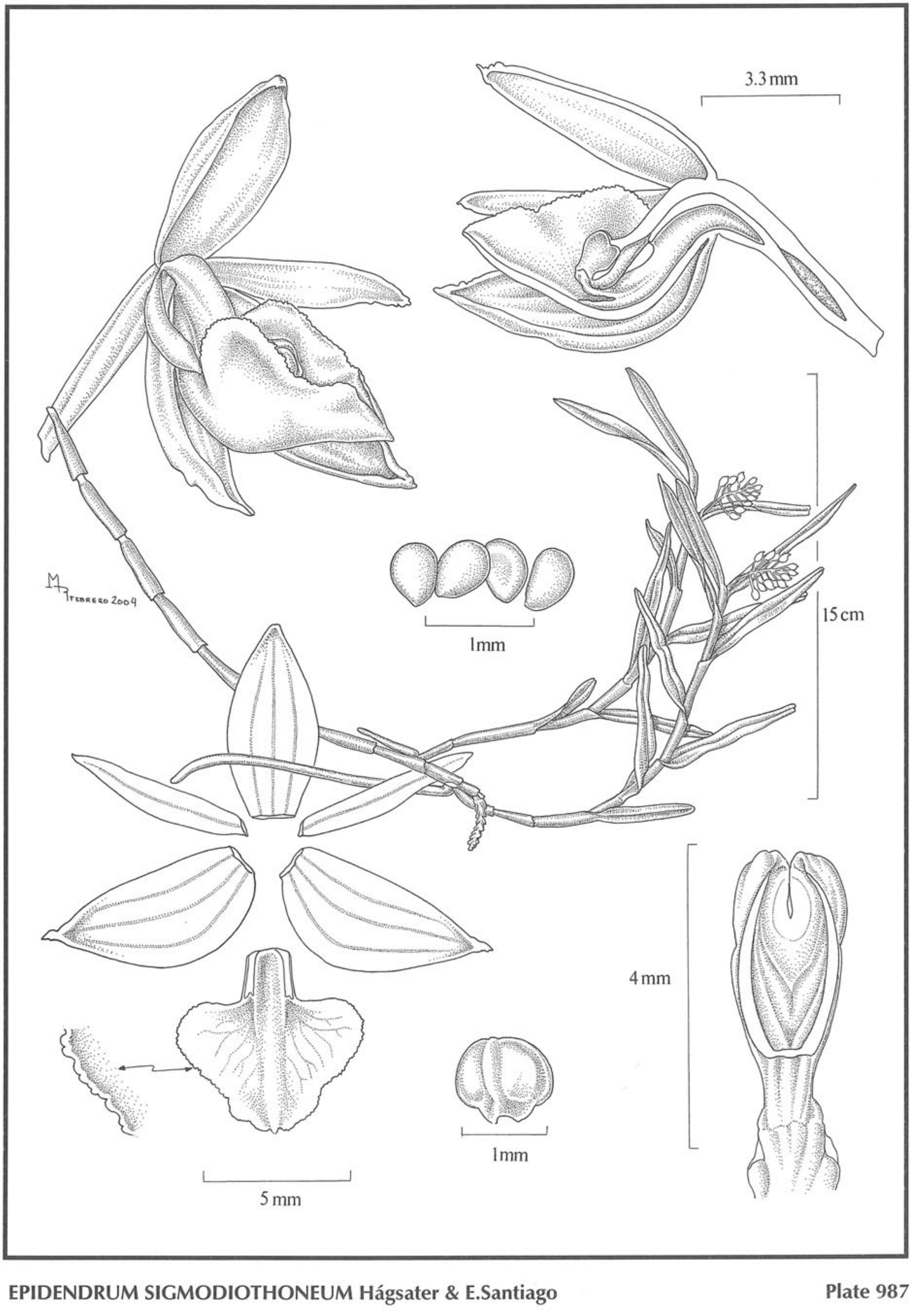
Hierba epífita, cespitosa, simpodial, 1.5-3.5 [ca. 5] cm de largo. **Raíces** basales, filiformes, 0.2-0.7 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, erectos, totalmente ocultos por la base de las hojas, 1.5-2.5 [ca. 5] cm de largo. **Hojas** 5-8, distribuidas a lo largo del tallo, dísticas, extendidas, desiguales, no articuladas, algo imbricadas en la base, suculentas; vainas tubulares, lateralmente comprimidas, dilatadas en el ápice, 2-3 mm de largo; lámina linear a oblongo lanceolada, amplexicaule y conduplicada en la base, obtusa, desigualmente bilobada, margen hialino, algo revoluto, ligeramente eroso en la base y dentado en el ápice, 5-16 [38] x 1.2-3.2 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, sésil, pauciflora, florece una sola vez. **Brácteas florales** ligeramente más largas que el ovario, desiguales en tamaño, anchamente triangulares, conduplicadas, agudas, amplexicaules, margen dentado, 6-8 mm de largo. **Flores** 3, simultáneas, erectas, mas o menos resupinadas, delicadamente carnosas, de color verde; sin datos de fragancia. **Ovario** triquetro, delgado, no inflado, con 3 quillas ventrales lisas, 5-6 mm de largo. **Sépalos** cortamente acuminados, margen extendido, 8-9 x 2.4-3.3 mm; el **dorsal** libre, reflexo, triangular ovado, cortamente aristado, con una quilla dorsal lisa, 3-nervado, el ápice de las nervaduras laterales unido a la nervadura central, margen entero, extendido; los **laterales** entreabiertos, adnados de manera oblicua a la columna, triangulares, 2-nervados, con una quilla dorsal alta, apicalmente eroso dentada, margen inferior dentado en el ápice. **Pétalos** adnados de manera oblicua a los 2/3 basales de la columna, entreabiertos, angostamente ovado triangulares, subacuminados, 1-3-nervados, oblicuos, margen escasamente ciliado, 6.7 x 2.4 mm. **Labelo** unido a la columna, carnoso, entero, la mitad basal transversalmente elíptico, la mitad apical triangular acuminado, margen entero, 3.3-4 x 3.5-4.1 mm; ecalloso, desprovisto de quillas, con algunas venas engrosadas al centro de la lámina. **Columna** delgada, recta, el ápice con un par de lóbulos redondeados, margen entero, 4 mm de largo. **Clinandrio** reducido, margen entero, levemente ondulado. **Antera** reniforme, 4-locular, margen apical dentado. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, casi tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ca. de ½ del ovario, amplio, sin formar vesícula, no ornamentado. **Cápsula** no vista.

Epiphytic, caespitose, sympodial, compact **herb. Roots** basal, filiform. **Stems** simple, cane-like, laterally compressed, erect, totally hidden by the base of the leaves. **Leaves** 5-8, distributed throughout the stem, distichous, spreading, unequal, non-articulate, somewhat imbricating at the base, succulent; sheaths tubular, laterally compressed, dilated towards the apex; blade linear to oblong-lanceolate, base amplexicaul and conduplicate, obtuse, unequally bilobed, margin hyaline, somewhat revolute, slightly erose at the base, apex dentate. **Inflorescence** apical, sessile, few-flowered, flowering only once. **Floral bracts** slightly longer than the ovary, unequal in size, widely triangular, conduplicate, acute, amplexicaul, margin dentate. **Flowers** 3, simultaneous, erect, more or less resupinate, delicately fleshy, green. **Ovary** short, triquetrus, thin, not inflated, with 3 smooth ventral keels. **Sepals** short-acuminate, margin spreading; the dorsal sepals free, reflexed, triangular-ovate, short-aristate, with a smooth dorsal keel, 3-veined, margin entire, spreading; lateral sepals partly spreading, obliquely adnate to the column, triangular, the lower margin dentate towards the apex, with a high dorsal keel, 2-veined, the apical margin erose-dentate. **Petals** obliquely adnate to basal 2/3 of the column, partly spreading, narrowly ovate-triangular, subacuminate, 1-3-veined, oblique, margin scarcely ciliate. **Lip** united to the column, fleshy, entire, the basal half transversely elliptic, the apical half triangular acuminate, margin entire; ecallose, without keels, with a somewhat thickened vein along the middle. **Column** thin, straight, with a pair of rounded lobes at the apex, margin entire. **Clinandrium-hood** reduced, margin entire, slightly undulate. **Anther** reniform, 4-celled, apical margin dentate. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** apical, slit. **Nectary** penetrating about ½ of the ovary, ample, without forming a vesicle, smooth.

OTHER SPECIMENS: PANAMA: Coclé: Vicinity of El Valle, 600-1000 [ca. 1500] m, 8 XII 1938, *Allen 1247*, AMES! MO! (Illustration voucher.)
DISTRIBUTION AND ECOLOGY: Known from the type from Costa Rica and a single collection from central Panama, Coclé province, from the vicinity of the Valle de Antón, 600-1500 m altitude. Flowering in December.
RECOGNITION: *Epidendrum serruliferum* belongs to the Nanodes Group, characterized by the caespitose to creeping, sympodial plants, the short stems completely covered by the base of the non-articulate, fleshy, imbricating leaves; sessile, few-flowered inflorescences. The species is recognized by the short plants (1.5-3.5 [ca.5] cm tall) with 3 greenish flowers, the floral bracts widely triangular, acute; the floral segments short-acuminate, the margin of the petals scarcely ciliate, the basal half of the lip transversely elliptic, the apical half triangular-acuminate, the margin of the clinandrium-hood entire, slightly undulate. It has been confused with *Epidendrum congestum* Rolfe which has 2-3 greenish flowers, occasionally tinged with reddish purple, the emerald-green lip cordiform, the floral bracts ovate and rounded, the floral segments acute to subacute, the margin of the petals erose-dentate, and the clinandrium-hood slightly erose. *Epidendrum congestoides* Ames & C. Schweinf. has acute sepals, the reniform-semiorbicular lip embracing the column in natural position with the margin hyaline, erose-dentate and the margin of the clinandrium-hood short fimbriate-dentate. *Epidendrum schlechterianum* Ames has relatively long, greenish purple to olive green flowers tinged with red, the oblong-lanceolate, the sepals 17-20 mm long, and the lip cordate-reniform, minutely apiculate, the column 10-14 mm long with the anther long, narrowly ovoid with the apical margin short-fimbriate; the surface strongly papillose. *Epidendrum oxynanodes* Hágsater from western Colombia has the largest flowers (sepals 22 mm long) with narrow, acuminate floral segments, including the ovate-acuminate lip, and the clinandrium-hood has a few prominent teeth along the margin. *Epidendrum uleinanodes* Hágsater from Manaus has a fimbriate clinandrium-hood and prominent, upturned, rounded lobes at the apex of the column, with the lip widely reniform and deeply cordate. *Epidendrum neodiscolor* Hágsater (*Nanodes discolor* Lindl.) with generally narrow, long leaves usually has 1-2 flowers, the acute sepals 8-10 mm long, the lip widely ovate, the base somewhat cuneate.



CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: From the Latin *serratus*, saw-edged, with sharp teeth pointing forwards, and *ferens*, bearing, carrying, in reference to the saw-edged keel of the lateral sepals.
REFERENCES: Williams, Louis O., 1946. **Orchidaceae** in **Flora of Panama**: 3(3): 278. as *Epidendrum congestum* Rolfe.



EPIDENDRUM SIGMODIOTHONEUM Hágsater & E.Santiago **Plate 987**

EPIDENDRUM SIGMODIOTHONEUM Hágsater et E.Santiago, *sp. nov.*

Type: PERÚ: Cajamarca: Contumazá, Bosque de Cachil, 2500 m, 6 December 1993, ***Abundio Sagástegui, S. Leiva & P. Lezama 15113.*** Holotype: F! (Illustration voucher.)

Epidendro jativae Dodson simile sed floribus resupinatis, columna perpendiculari respectu ovarium et labellum, ut flore sigmoidea a latere visa, petalis lineari-lanceolatis acutis, abhorrens.

Hierba epífita, escasamente ramificada arriba, ca. 37 cm de alto. **Raíces** basales en el tallo inicial y en los tallos superiores, escasas, carnosas, blancas, 1.6-3.2 mm de grosor. **Tallos** sencillos, cada tallo nuevo se origina de los entrenudos apicales del tallo anterior, tipo caña, teretes, delgados, rectos, 15-20 x 0.1-0.2 cm. **Hojas** 8-9, distribuidas en los 2/3 apicales del tallo, alternas, articuladas, suberectas; vaina tubular, finamente estriada, diminutamente verrugosa, 16-23 x 1.6-4 mm; lámina linear lanceolada, redondeada, incipientemente bilobada, margen entero, 3-6.4 x 0.5-0.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, suberecta, corta, densa, florece una sola vez, ca. 2 cm de largo; pedúnculo corto, terete, delgado, recto, 7 mm de largo; basalmente provisto de una bráctea linear lanceolada, acuminada, abrazadora, 6-7 mm de largo; raquis terete, delgado, recto, 15 mm de largo. **Brácteas florales** de más de la mitad del largo del ovario, linear lanceoladas, acuminadas, abrazadoras, 4-6 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 5-7 mm de largo. **Flores** 20, simultáneas, resupinadas, color amarillo; sin datos de fragancia. **Sépalos** entreabiertos, libres, ovado elípticos, subagudos, 3-nervados, margen entero, 5.5-6.6 x 2.7-3 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, linear lanceolados, agudos, 1-nervados, margen entero, 5.5 x 1 mm. **Labelo** unido a la columna, subentero, anchamente subtriangular, cóncavo, truncado en la base, incipientemente bilobado en el ápice (en botón floral en desarrollo), margen eroso; ecalloso, provisto de un par de quillas muy cortas en la base de la lámina, 4 x 5.5 mm. **Columna** geniculada con respecto al ovario, fuertemente arqueada hacia arriba en el ápice, delgada, corta, 4 mm de largo; la flor vista de lado fuertemente sigmoide, con el ovario paralelo al labelo y la columna perpendicular a ambos. **Clinandrio** corto, cóncavo, margen entero. **Antera** elipsoide, bidentada en el ápice, con una quilla baja al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** apical, hendido. **Nectario** poco profundo, penetrando ¼ del ovario, delgado, liso, no inflado. **Cápsula** no vista.

Epiphytic, **herb**, scarcely branching above. **Roots** basal from the basal stem and the upper stems, scarce, fleshy, thick. **Stems** simple, each new stem arising from an apical internode of the previous stem, cane-like, terete, thin, straight. **Leaves** 8-9, distributed along the upper 2/3 of the stem, alternate, articulate, suberect; sheath tubular, minutely striated, minutely verrucose; blade linear-lanceolate, rounded, slightly bilobed, margin entire. **Inflorescence** apical, racemose, suberect, short, dense, flowering only once, short; peduncle short, terete, thin, straight, basally provided with a linear-lanceolate, acuminate bract; rachis terete, thin. **Floral bracts** more than half as long as the ovary, linear-lanceolate, acuminate. **Ovary** terete, thin, not inflated, smooth. **Flowers** 20, simultaneous, resupinate, yellow. **Sepals** partly spreading, free, ovate-elliptic, subacute, 3-veined, margin entire; the lateral sepals oblique. **Petals** partly spreading, linear-lanceolate, acute, 1-veined, margin entire. **Lip** united to the column, subentire, widely subtriangular, concave, base truncate, apex slightly bilobed (in developing floral bud), margin erose; ecallose, provided with two short keels at base of the lip. **Column** geniculate with respect to the ovary, strongly upwards at the apex, thin, short; the flower, including the ovary thus strongly sigmoid, with the ovary and lip nearly parallel, and the column perpendicular to both. **Clinandrium-hood** short, concave, margin entire. **Anther** ellipsoid, apex bidentate, with a low keel in front, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** shallow, penetrating 1/4 of the ovary, thin, smooth, not inflated.

OTHER SPECIMENS: No seen.

DISTRIBUTION AND ECOLOGY: Known only from the upper reaches of the Cordillera Occidental, overlooking the Pacific Ocean in northern Peru, Department of Cajamarca, epiphyte in humid forests at 2500 m altitude. Flowering in January-February.

RECOGNITION: *Epidendrum sigmodiothoneum* belongs to the Diothonea Group and Subgroup which is characterized by the branching plants, linear-lanceolate to oblong leaves, the apex bilobed, racemose, arching-nutant inflorescence, membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose and without or with 1-10 thin, smooth to erose keels, the column completely free to obliquely united to the lip, the anther reniform. The species is recognized by the small, resupinate, sigmoid (when seen laterally), yellow flowers, the sepals 5.5-6.6 mm long, the column geniculate and perpendicular to the ovary and the lip. *Epidendrum jativae* has flowers of approximately the same size (sepals 6 mm long), but these are non-resupinate, greenish tinged with reddish or purple-brown, a straight column, and the flower is not sigmoid when seen from the side. *Epidendrum alfonsopozoi* Hágsater & Dodson has orange flowers tinged with reddish or purple-brown, sepals 4 mm long and a short, straight column 2 mm long, the lip with 3 prominent thickened keels. *Epidendrum amaruense* Hágsater, Collantes & E.Santiago has yellow to ochre-green, non-resupinate flowers, the margin of the sepals tinged with brownish-red, dorsally copper-colored, ovate petals 4 mm wide, and a reniform, bilobed lip with 5 keels.

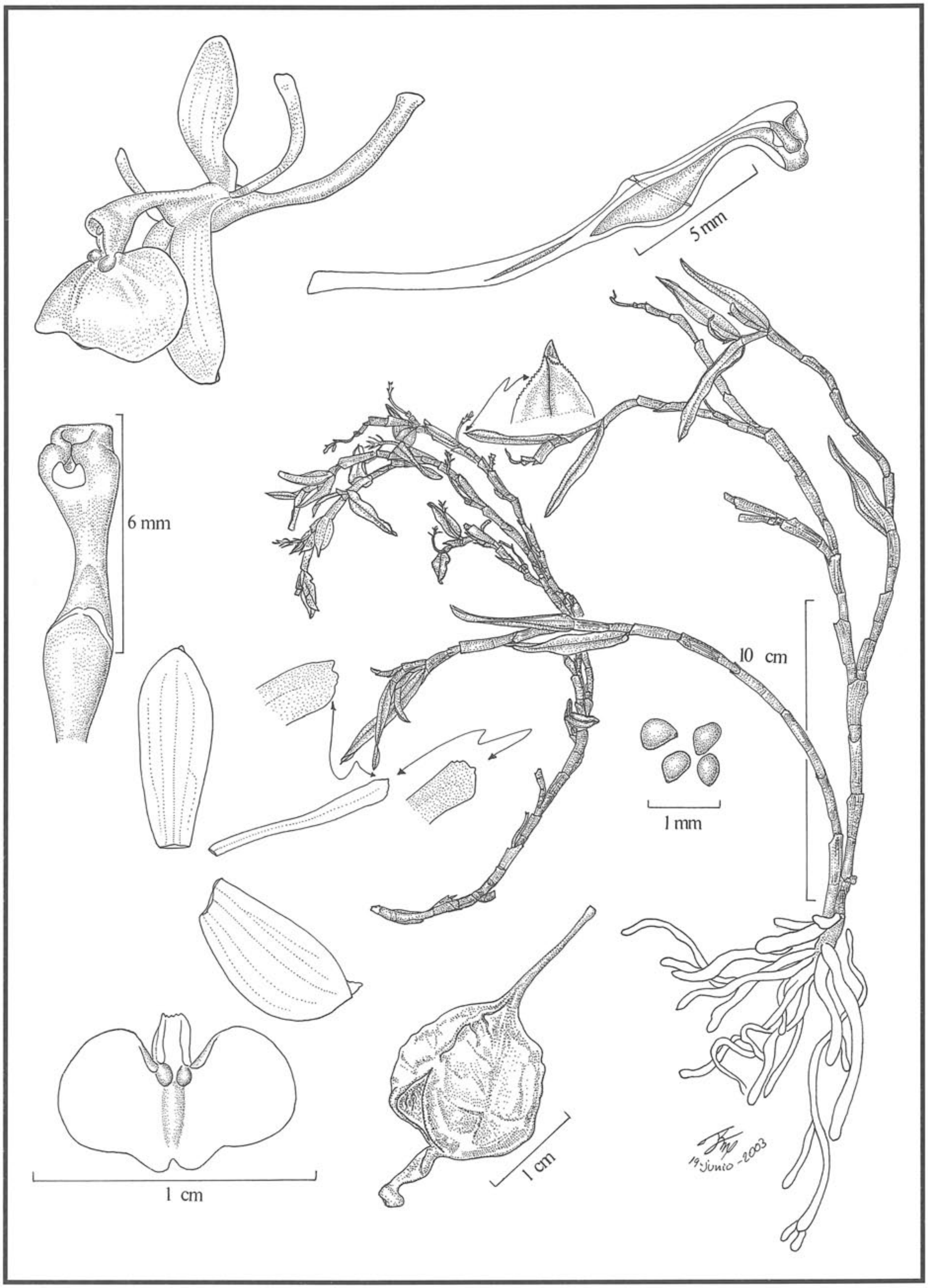


NOTE: The illustration and description are taken from a floral bud which was just opening, so there may be some details which are somewhat different when seen in well-developed flowers, such as the keels of the lip, or the shape and size of the lip itself.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek σιγμα, sigma, the letter S, and the generic name *Diothonea*, two-winged, in reference to the strongly geniculate column which distinguishes this species from others of the Diothonea Group in *Epidendrum*.

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EPIDENDRUM SORATAE Rchb.f.

Plate 988

EPIDENDRUM SORATAE Rchb.f., Xenia Orch. 3: 24. 1878.

Type: BOLIVIA: Larecajá; close to Sorata, monte Chilieca, on trees along the banks of the Challasuyo river, in scrub bushes, 2700-3100 m, ***G. Mandon 1138.*** Holotype: W 49900! Isotypes: AMES! BR! G(x2)! K! NY! P(x3)! S! (Illustration voucher). W(x2)!

Hierba epífita, de simpodio erecto, ramificado, 22-27 cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-2.5 mm de grosor. **Tallos** ramificados, tipo caña, teretes, delgados, el principal 22-27 x 0.2-0.3 cm; tallos secundarios, producidos a lo largo de la parte media apical del tallo principal, 7-14 x 0.12-0.2 cm; tallos terciarios muy cortos, producidos frecuentemente de un entrenudo arriba de la mitad del tallo anterior, 2-3 x 0.1-0.13 cm. **Hojas** ca. 13 en el tallo principal, distribuidas hacia los dos tercios apicales de los tallos, 3-5 en los terciarios, distribuidas en toda su longitud, alternas, caedizas; vaina tubular, estriada, rugosa, infundibuliforme, 0.7-1.4 cm de largo; lámina lanceolada, subaguda, aristada, margen entero, subcoriácea, lisa, las del tallo principal, en general más grandes, 3.6-4.7 x 0.6-0.8 cm; las de las ramas 1.7-4.2 x 0.4-0.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, generalmente de los tallos terciarios, racemosa, florece una sola vez, subcapitada, en flor cuando la rama ha iniciado el crecimiento de una nueva ramificación, 1.6-2 cm de largo; pedúnculo terete, delgado, desprovisto de brácteas, 8-10 mm de largo; raquis terete, delgado, recto, 8-10 mm de largo. **Bráctea floral** mucho más corta que el ovario, lanceolada, acuminada, abrazadora, 2-6 mm de largo. **Flores** 8-12, sucesivas, varias abiertas a la vez, resupinadas, flores verde amarillas, sin datos de fragancia. **Ovario** terete, delgado, liso, inflado ventralmente justo detrás del perianto, 12-15 mm de largo. **Sépalos** entreabiertos, libres, redondeados, margen entero; el **dorsal** angostamente obovado, 3-nervado, 6.8 x 2.5 mm; los **laterales** obovados, aristados, oblicuos, con quilla dorsal, 4-nervados, 7 x 3.1 mm. **Pétalos** lineares, ligeramente dilatados hacia el ápice, subtruncados, 1-nervados, margen apical ligeramente eroso, 6.7 x 0.6 mm. **Labelo** unido a la columna, reniforme, incipientemente trilobado, profundamente cordado en la base, margen entero, 6.5 x 8.2 mm; bicalloso, los callos pequeños, globosos; provisto de una quilla intercallosa, ancha, roma y lisa, que se desvanece antes de llegar a la base del lóbulo medio; lóbulos laterales anchamente obovados, 3.4 x 4.3 mm; lóbulo medio muy corto, bilobado, más ancho que largo, 0.8 x 3.4 mm. **Columna** delgada y recta en los 2/3 basales, ligeramente arqueada hacia abajo y obcónica en el 1/3 apical, 6 mm de largo. **Clinandrio** corto, carnoso, margen entero. **Antera** subglobosa. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas granulosas, viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, penetrando 1/5 del ovario y formando una vesícula prominente a la altura del perianto. **Cápsula** globosa, con un pedicelo prominente pero delgado, cuello apical corto y grueso; 23-25 x 9 mm, pedicelo 7 mm, cuerpo 12 x 9 mm, cuello apical 3 mm de largo.

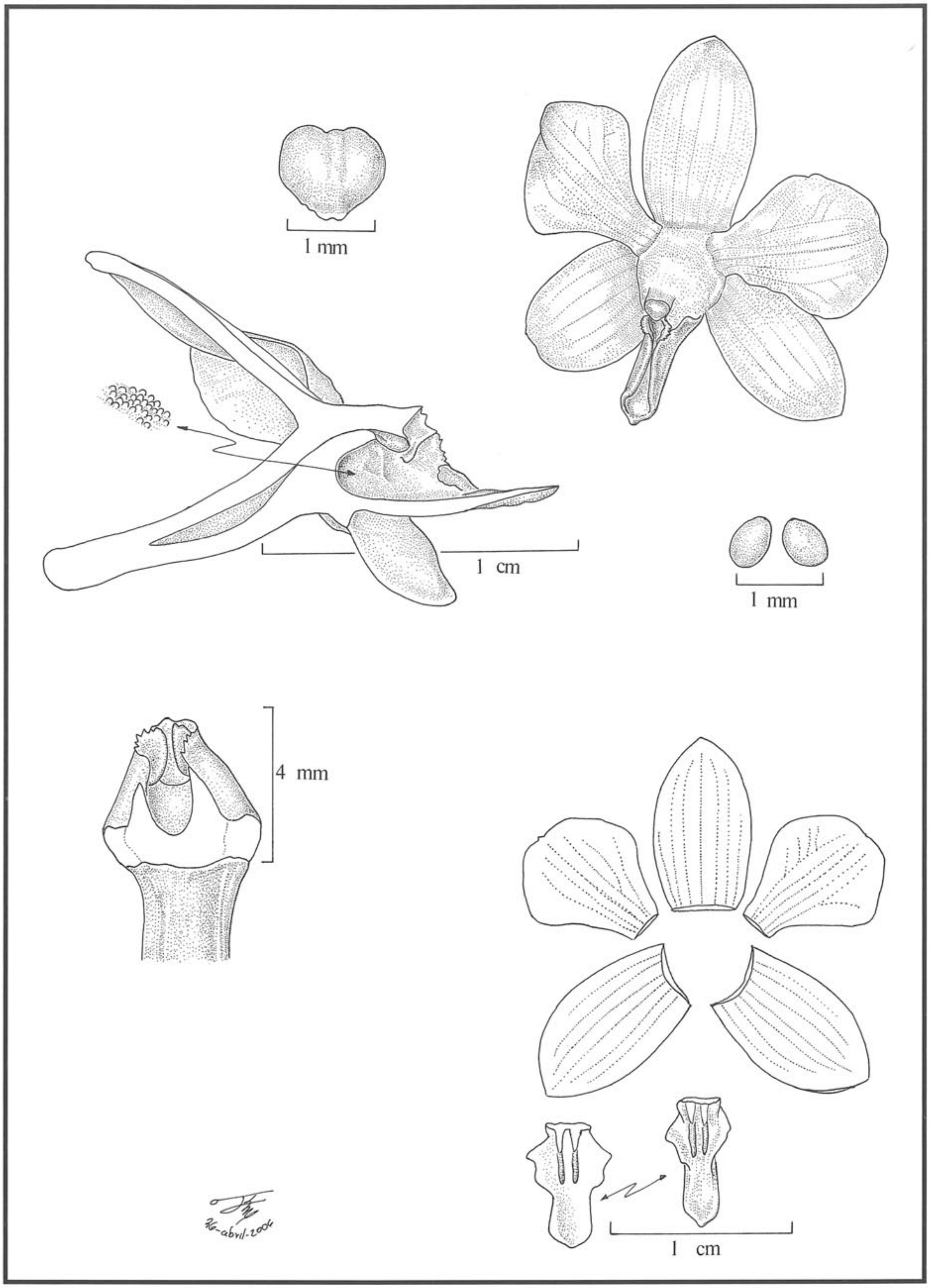
Epiphytic **herb**, profusely branched, erect. **Stems** terete, branching from the middle and upper internodes of the primary stem, tertiary stems are 3-5 nodes long and produce new stems from the third internode, sometimes branching; mature plants may produce a new stem from the base of the primary stem. **Leaves** numerous on the main stem; leaf-sheaths striated, rugose, infundibuliform; blade lanceolate, aristate, margin entire, those of the main stem larger than those of the branches. **Inflorescence** apical, mainly from the tertiary stems, produced from the mature stem when it has initiated growth of a new module, racemose, subcapitate, flowering only once, with a thin pedicel, subcapitate. **Floral bracts** lanceolate, acuminate, much shorter than the ovary. **Flowers** 8-12, successive, several open at one time, resupinate, greenish yellow in color. **Ovary** thin, with a swollen vescicle at the apex, at the height of the perianth. **Sepals** partly spreading, free, rounded, margin entire; dorsal narrowly obovate, 3-veined; laterals obovate, apiculate, keeled, 4-veined. **Petals** linear, somewhat dilated towards the rounded apex, 1-veined. **Lip** reniform, somewhat 3-lobed, base cordate, margin entire, apex with a pair of incipient lobes, emarginate; bicallose, the calli globose. **Column** straight, constricted in the middle. **Clinandrium-hood** short, fleshy, entire. **Nectary** penetrating slightly behind the lateral sepals and forming a vescicle. **Anther** subglobose. **Pollinia** 4, obovoid, caudicles soft and granulose, viscidium semi-liquid. **Rostellum** apical, slit. **Capsule** globose, with a long, thin pedicel, and a short apical neck.

OTHER SPECIMENS: See appendix.
DISTRIBUTION AND ECOLOGY: Upper reaches of the eastern Cordillera of the Andes from Perú to Bolivia. Flowering in January to August.
RECOGNITION: *Epidendrum soratae* belongs to the Soratae Subgroup of the Scabrum Group which is characterized by the branching habit starting on a monopodial, primary stem, infundibuliform, rugose leaf-sheaths, lanceolate, aristate, acute leaves, racemose subcapitate inflorescence on a short, thin peduncle, and the bicallose lip. The species can be recognized by the reniform, apically somewhat 3-lobed, bicallose lip, and the 6-7 mm long sepals. *Epidendrum obliquum* Schltr. has a reniform, emarginate lip 4 x 8 mm in size and a straight column. *Epidendrum cardenasii* Hágsater has larger flowers, 12-13 mm long sepals, the lip bilobed, widely emarginate and about as long as it is wide, the base short cordate and the calli laminar and divaricate. *Epidendrum tetragonum* Hágsater & Dodson has a rectangular lip, the apex truncate, sepals 7-8 mm long, the lip is oblong-rectangular, with two inconspicuous lobes at the base. *Epidendrum cartilaginiflorum* Rchb. f. has a cordiform, somewhat 3-lobed-lip, apex obtuse, rounded, and the sepals are 16 mm long. *Epidendrum steinbachii* Ames has adpressed sheaths instead of these being infundibuliform, and therefore does not belong to this group; the lip is entire, reniform, with sepals 6 mm long. *Epidendrum ardens* Kraenzl. has bright orange flowers, with an entire lip. The name has been applied to a Antillean species, *E. annabellae* Nir which has an apiculate reniform to broadly cordiform lip and 5-6 mm long-sepals.



NOTES: Plants of the genus *Epidendrum* have been characterized as having a sympodial growth mode, however, in a number of groups of species, mainly the Ramosum Group, there is clearly a primary stem which is produced from the protocorm, and only after several years, does it produce secondary stems from the upper nodes of the primary stem, from which the plant flowers. The primary stem does not appear to flower.
This species has been difficult to place as far as close relatives is concerned. Young plants, when first flowering, show the primary stem with large leaves and several short branches near the apex, from which the inflorescence appears to be produced laterally, because it appears when the new growth has started from a subapical node of the flowering stem. More mature plants have usually lost the larger leaves of the main stem, and are much branched, with the old inflorescence clearly visible. Plants from the Dominican Republic in the Antilles that have been determined as this species, correspond to a recently described entity, *Epidendrum annabellae* Nir.
CONSERVATION STATUS: DD. Data deficient.
ETYMOLOGY: In reference to the locality of Sorata in the province of Larecajá in the Bolivian Department of La Paz, where G. Mandon originally collected the type.

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EPIDENDRUM SPHENOSTELE Hágsater & E.Santiago Plate 989

EPIDENDRUM SPHENOSTELE Hágsater *et* E.Santiago, *sp. nov.*

Type: PANAMÁ: Chiriquí: Boquete, Valle Fortuna; received flowers 1 October 1987, cultivated by *Andres Maduro,* sent to *Robert L. Dressler,* who in turn sent it to ***E. Hágsater 9361.*** Holotype: spirit AMO! (Illustration voucher.)

Epidendro bicuniculato Hágsater & E.Santiago simile sed labello oblongo (in aspectu generali), lobulis lateralibus parvis, columna incrassata cum marginibus lateralibus reflexis denticulatisque, nectario amplo ad fundum rotundato, distinctum.

Hábito no visto. **Ovario** terete, delgado, no inflado, liso, 9 mm de largo. **Flores** 2 (vistas), sin datos de color ni fragancia. **Sépalos** libres, elípticos, redondeados, 7-nervados, margen entero, extendido, 10 x 5.5 mm; el **dorsal** algo reflexo; los **laterales** extendidos. **Pétalos** extendidos, libres, obovado espatulados, algo convexos, redondeados, 5-nervados, margen entero, extendido, 8 x 7 mm. **Labelo** unido a la columna, incipientemente trilobado, oblongo en forma general, la lámina extendiéndose desde la mitad apical de la columna, 7.5 x 3.5 mm; ecalloso, con un par de quillas cortas y paralelas que se desvanecen antes de llegar a la base del lóbulo medio; lóbulos laterales pequeños, anchamente subtriangulares, margen eroso dentado, 1 x 3 mm; lóbulo medio oblongo, ligeramente cóncavo en el ápice, subagudo, diminutamente apiculado, margen entero, algo involuto en posición natural, 3.5 x 2 mm. **Columna** corta, gruesa, amplia en la base y gradualmente más angosta hacia el ápice, en forma de cuña, el ápice alargado hasta la mitad del labelo con los márgenes laterales reflexos, denticulados, 4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 2-locular, ovoide, con una quilla dorsal baja. **Polinios** 2, angostamente obovoides; caudículas no vistas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, sin penetrar el ovario, amplio, redondeado al fondo, no inflado, diminutamente papiloso. **Cápsula** no vista.

Plant not seen. **Ovary** terete, thin, not inflated, smooth. **Flowers** only two seen. **Sepals** free, elliptic, rounded, 7-veined, margin entire, the dorsal sepals somewhat reflexed, the lateral sepals spreading. **Petals** spreading, free, obovate-spatulate, somewhat convex, rounded, 5-veined, margin entire, spreading. **Lip** united to the column, somewhat 3-lobed, oblong y general outline, blade spreading from the middle of the column; ecallose, with a pair of short, parallel keels, that do not reach the base of the midlobe; lateral lobes small, widely subtriangular, margin erose-dentate; midlobe oblong, slightly concave near the apex, subacute, minutely apiculate, margin entire, involute in natural position. **Column** short, thick, wide at the base, gradually narrowed towards the apex, wedge-shaped, apex extending to the middle of the lip, the lateral margins reflexed, denticulate. **Clinandrium-hood** reduced, margin entire. **Anther** 2-celled, ovoid, with a low, dorsal keel. **Pollinia** 2, narrowly obovoid. **Rostellum** subapical, slit. **Nectary** shallow, without penetrating the ovary, wide, rounded, not inflated, minutely papillose.

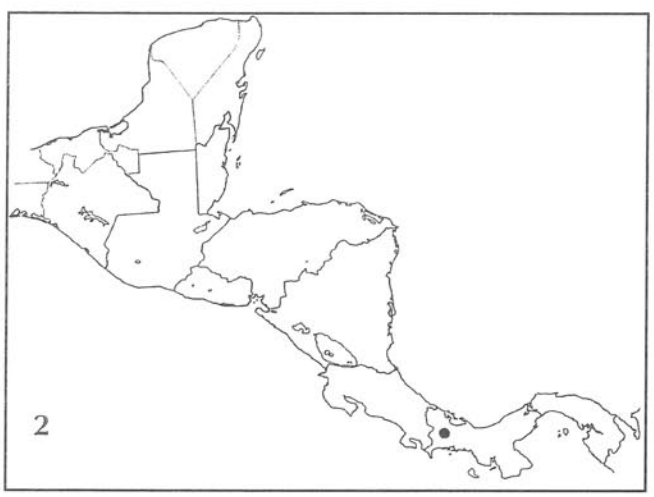
OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from western Panama, from a cultivated plant.

RECOGNITION: *Epidendrum sphenostele* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, non-resupinate flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized by the relatively large flowers (sepals 10 mm long), the wide, obovate-spatulate petals, the oblong lip spreading from the middle of the column, with very small lateral lobes, conical column with and the apex with the lateral margins reflexed and denticulate. *Epidendrum bicuniculatum* has similar sized flowers but the lip spreads from the base of the column and is widely obovate, with prominent lateral lobes as long as the midlobe, and the column is thin, and the laminar lateral margins are slightly erose. *Epidendrum dwyeri* Hágsater has slightly smaller flowers (sepals 7-8.6 mm long), a suborbicular lip, cuneate, spatulate petals, and the column thin and vertically compressed. *Epidendrum philowercklei* Hágsater & E.Santiago has very similar wide, column and nectary, but the flowers are smaller (sepals 6.0-6.5 mm long), the lip 3-lobed with the margin of the lateral lobes divided and finger-like.

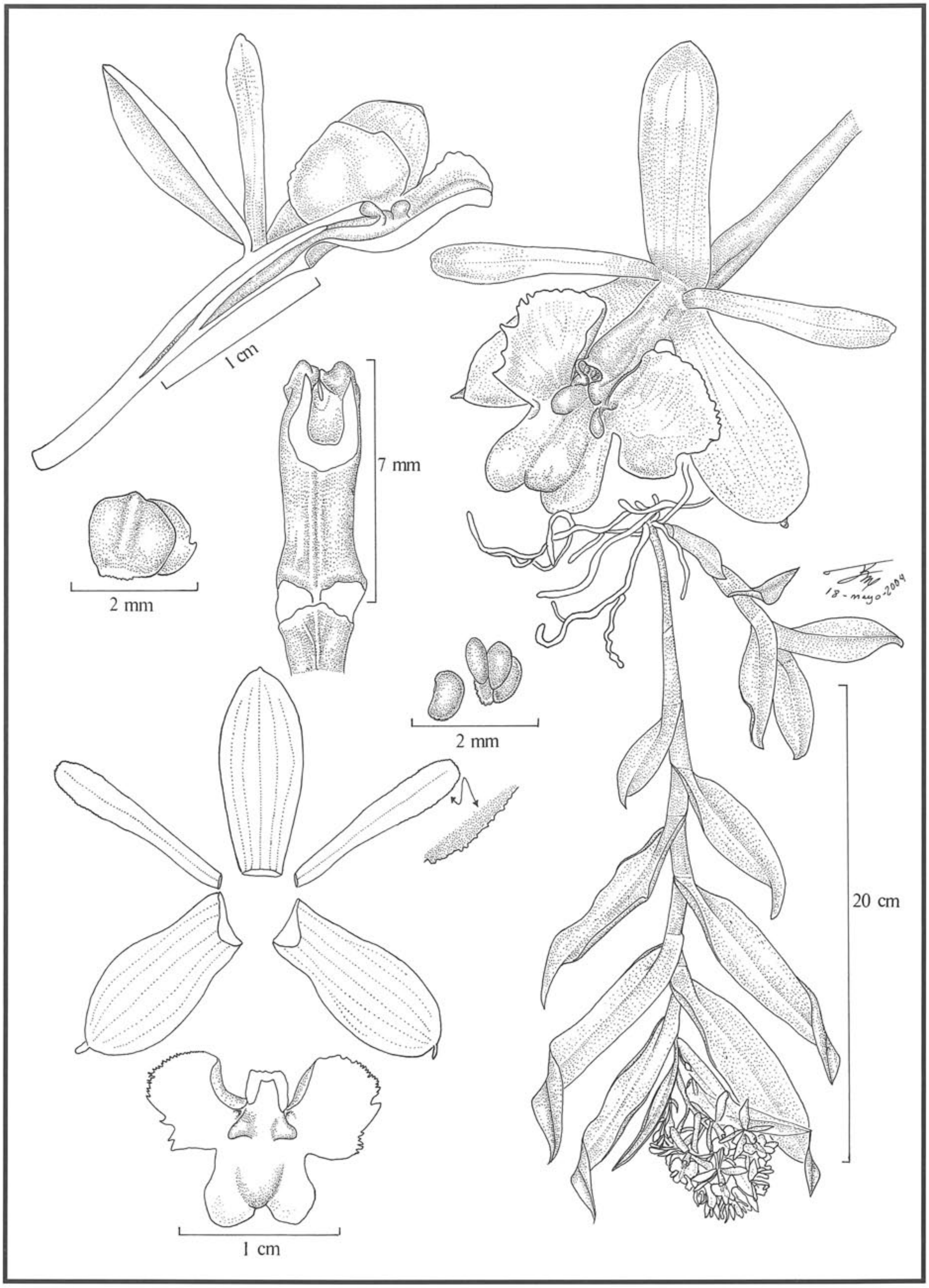
NOTE: In nearly all species of *Epidendrum* the lip expands from the apex of the column, or from where the union of the column and the claw of the lip end. However in this species, the blade extends from the apical half of the column. *E. bicuniculatum* and *E. epidendroides* the lip starts spreading from the base of the column, and the union of the column to the lip extends well beyond, to about the middle of the lip or beyond.

CONSERVATION STATUS: DD. Data deficient.



ETYMOLOGY: From the Greek σφηνωτος, cuneate, and στηλη, column, in reference to the wedge-shaped column of this species.

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EPIDENDRUM SPICATUM Hook. **Plate 990**

EPIDENDRUM SPICATUM Hook. f., Trans. Linn. Soc. Lond. 20: 180. 1847.

Type: ECUADOR: Galapagos: [Isla San Cristobal]: Chatham Island, ***Capt. Wood.*** Holotype: K! Non *Epidendrum spicatum* Rojas (= *Encyclia argentinensis* (Spegazzini) Hoehne.)

Hierba epífita o litófita, simpodial, cespitosa, erecta a colgante, 23-50 cm de largo. **Raíces** basales, carnosas, delgadas, blancas, 1.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base, lateralmente aplanados arriba, ligeramente flexuosos, 21 x 0.3-0.7 mm. **Hojas** 9, distribuidas a lo largo de los tallos, alternas, articuladas, subcoriáceas, desiguales, las basales y las apicales más cortas; vaina tubular, finamente estriada, 1-3 cm de largo; lámina angostamente elíptica, ápice agudo, margen entero, ligeramente revoluto, 4.7-14 x 0.6-2.5 cm. **Inflorescencia** apical, pluriracemosa, recta, densa, 6.5-8 cm de largo; pedúnculo terete, delgado, produciendo racimos sucesivos, el primero apical, los siguientes de los nudos del pedúnculo, 2.5 cm de largo. **Bráctea espatácea** ausente. **Flores** ca. 18 por racimo, sucesivas, varias abiertas de manera simultánea, resupinadas, verdes; sin datos de fragancia. **Brácteas florales** casi tan largas como el ovario a más cortas que éste, gradualmente más pequeñas hacia el ápice, oblongas a angostamente triangulares, agudas, abrazadoras, 6-16 x 2-3 mm. **Ovario** terete, delgado, no inflado, liso, 13-18 mm de largo. **Sépalos** extendidos, libres, obovados, redondeados en el ápice, 5-nervados, margen entero, 13-13.7 x 5.3-6 mm; el **dorsal** diminutamente apiculado; los **laterales** con una quilla dorsal prominente. **Pétalos** extendidos, libres, linear oblanceolados, redondeados, 1-nervados, margen entero en la base y denticulado en la mitad apical, 12.8 x 2 mm. **Labelo** unido a la columna, trilobado, profundamente cordado en la base, 11 x 14.5 mm; bicalloso, los callos prominentes, algo láminares, ligeramente divaricados; provisto de una quilla central, lisa, incospicua en la base, ancha y prominente en el ápice; lóbulos laterales suborbiculares, margen irregularmente dentado, 5.6 x 6.5 mm; lóbulo medio anchamente subrectangular cuneado, bilobado en el ápice, seno mucronado, margen entero, 5 x 6.8 mm. **Columna** recta, delgada en la base y ligeramente más ancha en el ápice, 7 mm de largo. **Clinandrio** corto, margen entero. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ¼ del ovario, delgado, no inflado, no ornamentado. **Antera** subreniforme, con una quilla lisa y roma al frente, 4 locular. **Polinios** 4, obovoides. **Cápsula** subglobosa, 35 x 17 mm; pedicelo corto, 7 mm de largo; cuello apical 7 mm de largo.

Epiphytic or lithophytic, sympodial, caespitose, erect to hanging **herb. Roots** basal, fleshy, thin, white. **Stems** simple, cane-like, terete below, laterally compressed above, slightly flexuous. **Leaves** 9, distributed throughout the stem, alternate, articulate, subcoriaceous, unequal, the basal and apical ones shorter; sheaths tubular, minutely striated; blade narrowly elliptic, apex acute, margin entire, slightly revolute. **Inflorescence** apical, pluri-racemose, producing successive racemes from the lower nodes, straight, dense; peduncle terete, thin. **Flowers** ca. 18 per raceme, successive, several open at one time, resupinate, green. **Floral bracts** nearly as long as to shorter than the ovary, the apical ones gradually shorter, oblong to narrowly triangular, acute. **Ovary** terete, thin, smooth. **Sepals** spreading, free, obovate, apex rounded, 5-veined, margin entire; the **dorsal** minutely apiculate; the **laterals** with a prominent dorsal keel. **Petals** spreading, free, linear-oblanceolate, rounded, 1-veined, margin entire at the base, denticulate in the apical half. **Lip** united to the column, 3-lobed, base deeply cordate; bicallose, the calli prominent, somewhat laminar, slightly divaricate; provided with a central keel, smooth, inconspicuous at the base, wide and prominent at the apex; lateral lobes suborbicular, margin unequally dentate; midlobe widely rectangular cuneate, apex bilobed, sinus mucronate, margin entire. **Column** straight, thin at the base, somewhat dilated towards the apex. **Clinandrium** short, margin entire. **Rostellum** apical, slit. **Nectary** penetrating 1/4th of the ovary, thin, smooth. **Anther** subreniform, with a low, rounded keel in front, 4-celled. **Pollinia** 4, obovoid. **Capsule** subglobose, pedicel and neck short.

OTHER SPECIMENS: ECUADOR: Galapagos: Isabela (Albermarle): 877 m, 9 II 1968, *Weber 217 A*, AMES! 3500 ft, 26 V 1974, *van der Werff 1227*, U! **Pinta (Abingdon)**: 550 m, 24 X 1984, *Huttel 416*, QCA! 630 m, 21 V 1964, *Snow 596*, K! 1900 ft, 27 VIII 1906, *Stewart 1137*, AMES! 1200-3150 ft, 5 I 1905, *Stewart 1138*, AMES! **San Cristobal (Chatham)**: 500 m, 20 IV 1974, *Adsersen 1704*, QCA! **San Salvador (James)**: 900 m, 31 X 1984, *Huttel 439*, QCA! QCNE! 850 m, 16 IX 1975, *Reeder s.n.*, WIS! 2100 ft, 18 IX 1906, *Stewart 1139*, CAS! **Santa Cruz (Indefatigable)**: 650 m, 6 II 1964, *Adsersen 332*, QCA! 200-260 m, 26 I 1964, *Fosberg 44791*, AMES! MO! 300 m, 21 V 1959, *Harling 5119*, S! 375 m, II 1926, *Rorud s.n.*, AMES! 1000-2000 ft, 1 IV 1930, *Svenson 140*, AMES! UC! 2100 ft, XII 1974, *van der Werff 1739*, CAS! K! QCA! U! (Illustration voucher.) 500 m, 28 X 1967, *Weber 198*, AMES x2! 780 m, 10 XI 1967, *Weber 202 A*, AMES! 8 II 1964, *Wiggins 18652*, AMES! CAS!



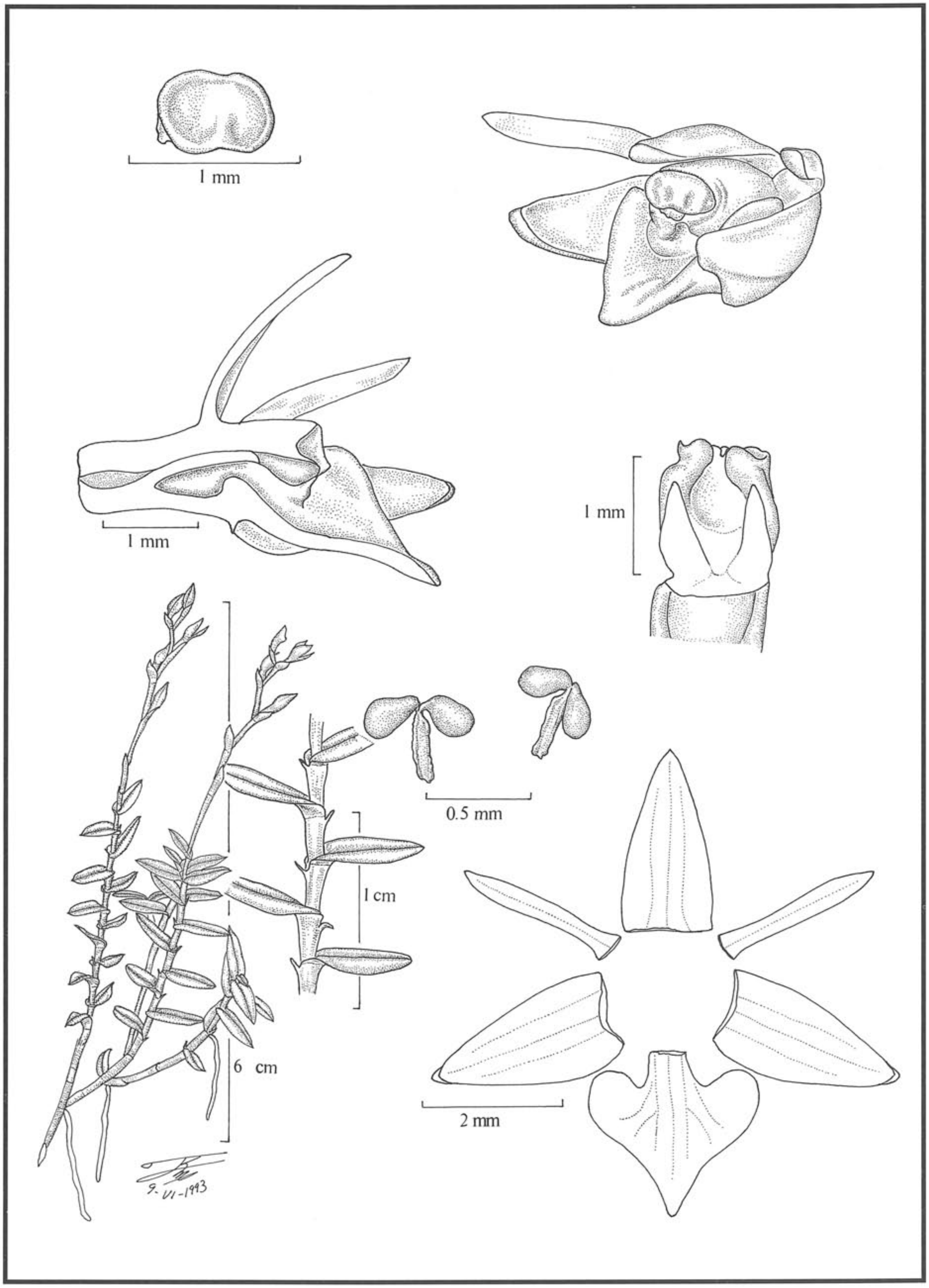
OTHER RECORDS: ECUADOR: Galapagos: San Salvador: Academy Bay, 30 XI, 1966, *Luer s.n.* photographs, Amer. Orch. Soc. Bull. 41(10): 868, 869. 1972. Without locality, *Garay "del"* pg. 907, fig. 258, in Wiggins, I. L. & D. M. Porter, *Flora of the Galapagos Islands*, 1971. Stanford University Press. Xerox of illustration, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to the larger Galapagos Islands, epiphytic on *Scalesia, Acnistus* and *Zanthoxylum* trees at about 260-900 m altitude, the branches of the trees covered in moss and lichens and on rocks. Flowering October-May. Fruiting February-June.

RECOGNITION: *Epidendrum spicatum* belongs to the Anceps Group, Polyanthum Subgroup, characterized by the sympodial, caespitose habit, simple, cane-like stems, generally elongate, pluri-racemose inflorescence producing successive racemes over the years, and the fleshy lip. The species has a short inflorescence, about as long as the leaves, successive, green, fleshy flowers, the lateral lobes of the lip unequally dentate. It is somewhat similar to *Epidendrum chlorops* Rchb.f. from southern Mexico, which has a similar habit, short, multi-annual inflorescence, and green flowers, but the margin of the lip is entire. There does not appear to be any closely related species in continental South America.

NOTE: A peloric form with the petals similar to the lip has been recorded on Santa Cruz Island (*Weber 202A*, pro parte).
CONSERVATION STATUS: Not Threatened. The species is widespread and the islands constitute a protected area.
ETYMOLOGY: From the Latin *spica*, an inflorescence with sessile flowers along an axis.

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EPIDENDRUM STENOSELAGINELLA Hágsater & E.Santiago **Plate 991**

EPIDENDRUM STENOSELAGINELLA Hágsater *et* E.Santiago, *sp. nov.*

Type: COSTA RICA: Volcán Poás-San José, collected and cultivated by J. & L. Orchids, received 6 November 1991, pressed 11 VI 1993, ***Hágsater 11115.*** AMO! (Illustration voucher.)

Epidendro selaginella Schltr. simile sed caulibus teretibus angustioribus, foliis lineari-lanceolatis, floribus in inflorescentiam laxe distributis, labello vix longiore quam latiore, secus totam columnam juncto, ovario sepalisque glabris, dissimile.

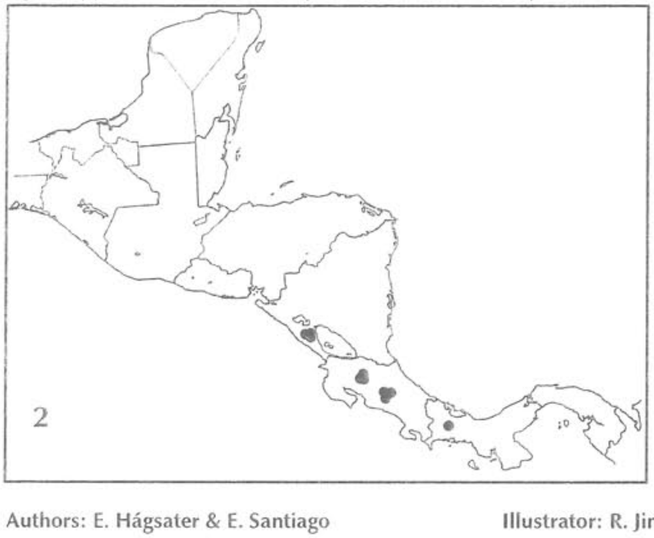
Hierba epífita, simpodial, subcespitosa, 4-8.5 cm de alto. **Raíces** originándose en la base de cada tallo, muy delgadas, carnosas, blancas, 0.1-0.4 mm de grosor. **Tallos** sencillos, producidos del 2-3 entrenudo del tallo anterior, tipo caña, teretes, delgados, erectos, rectos, 2-6 x 0.03-0.07 cm. **Hojas** 9-15, distribuidas a todo lo largo del tallo, dísticas, alternas, articuladas, equidistantes, comúnmente erecto extendidas; vainas tubulares, algo infladas en el ápice, sin llegar a ser infundibuliformes, algo lateralmente aplanadas, finamente estriadas, 1.5-2.7 x 0.4-0.7 mm; con una lígula muy evidente del lado opuesto de la lámina, triangular, subaguda, conduplicada, 0.4-0.7 mm de largo; lámina linear lanceolada, obtusa, desigualmente bilobada en el ápice, diminutamente apiculada, coriácea, amplexicaule, margen entero, algo revoluto, 2.7-8 x 0.7-2 [3] mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, raramente secundiflora, erecta, elongada, 1.5-3.5 cm de largo; pedúnculo corto, filiforme, recto, 5-17 mm de largo; ocasionalmente provisto de 1 bráctea semejante a las florales, tubular en la base, aguda en el ápice, 3-5 mm de largo; raquis recto, con las flores laxamente distribuidas. **Brácteas florales** ligeramente más cortas a casi tan largas como el ovario, angostamente ovadas, agudas, conduplicadas, abrazadoras, ligeramente papilosas, 1.5-2.8 mm de largo. **Ovario** corto, terete, delgado, no inflado, no ornamentado, 1.7-2.8 mm de largo. **Flores** 4-5, simultáneas, no resupinadas, dísticas, verdosas, amarillas o amarillo verdosas; sin datos de fragancia. **Sépalos** entreabiertos, libres, ovado triangulares, agudos, con una quilla dorsal baja, carnosos, glabros, 3-nervados, margen extendido, entero, 2.5-3 x 1-1.5 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, lineares, subagudos, glabros, 1-nervados, margen extendido, entero, 2.5-3 x 0.2-0.4 mm. **Labelo** unido totalmente a la columna, entero, triangular cordado, casi tan largo como ancho, algo cóncavo en la base, agudo en el ápice, abrazando a la columna en posición natural sin envolverla por completo, 1.6-2 x 1.5-2.3 mm; ecalloso y desprovisto de quillas, con venas engrosadas en toda la superficie de la lámina. **Columna** corta, recta, gruesa, el ápice con un par de dientes laterales incipientes, 1-1.3 mm de largo. **Clinandrio** corto, margen irregular. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas granulosas, del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando 1/3 del ovario, estrecho a la altura del perianto, amplio, algo inflado, no ornamentado. **Cápsula** elipsoide, con el perianto persistente, pedicelo sésil; cuerpo 4 x 2.5 mm; cuello apical obsoleto.

Epiphytic, sympodial, subcaespitose **herb. Roots** originating from the base of the stem, filiform, fleshy, white. **Stems** simple, produced from the 2-3rd internode of the previous stem, cane-like, terete, thin, erect, straight. **Leaves** 9-15, equally distributed throughout the stem, distichous, alternate, articulate, generally erect-spreading; sheaths tubular, somewhat inflated towards the apex without being infundibuliform, somewhat laterally flattened, minutely striated; with a very evident apical ligule opposite the blade, triangular, subacute, conduplicate; blade linear-lanceolate, obtuse, apex unequally bilobed and minutely apiculate, coriaceous, amplexicaul, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, rarely secund, erect, elongate; peduncle short, filiform, straight, occasionally provided with a single bract similar to the floral bracts, tubular at the base, apex acute; rachis straight, the flowers laxly spread. **Floral bracts** slightly shorter to as long as the ovary, narrowly ovate, acute, conduplicate, amplexicaul, slightly papillose. **Ovary** short, terete, thin, not inflated, smooth. **Flowers** 4-5, simultaneous, non-resupinate, distichous, greenish, yellow or greenish yellow. **Sepals** partly spreading, free, ovate-triangular, acute, with a low dorsal keel, fleshy, glabrous, 3-veined, margin spreading, entire; the lateral sepals slightly oblique. **Petals** partly spreading, free, linear, subacute, glabrous, 1-veined, margin spreading, entire. **Lip** totally united to the column, entire, triangular-cordate, acute, nearly as long as it is wide, somewhat concave at the base, embracing the column in natural position without covering it; ecallose and without keels, with thickened veins throughout the surface. **Column** short, straight, thick, with a pair of small lateral teeth at the apex. **Clinandrium-hood** short, margin irregular. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles granulose, twice as long as the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, wide, slightly inflated, smooth. **Capsule** ellipsoid, perianth persistent, pedicel sessile, apical neck obsolete.

OTHER SPECIMENS OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from southern Nicaragua to Western Panama, at 650-1700 m altitude; epiphytic. Flowering from May to November.

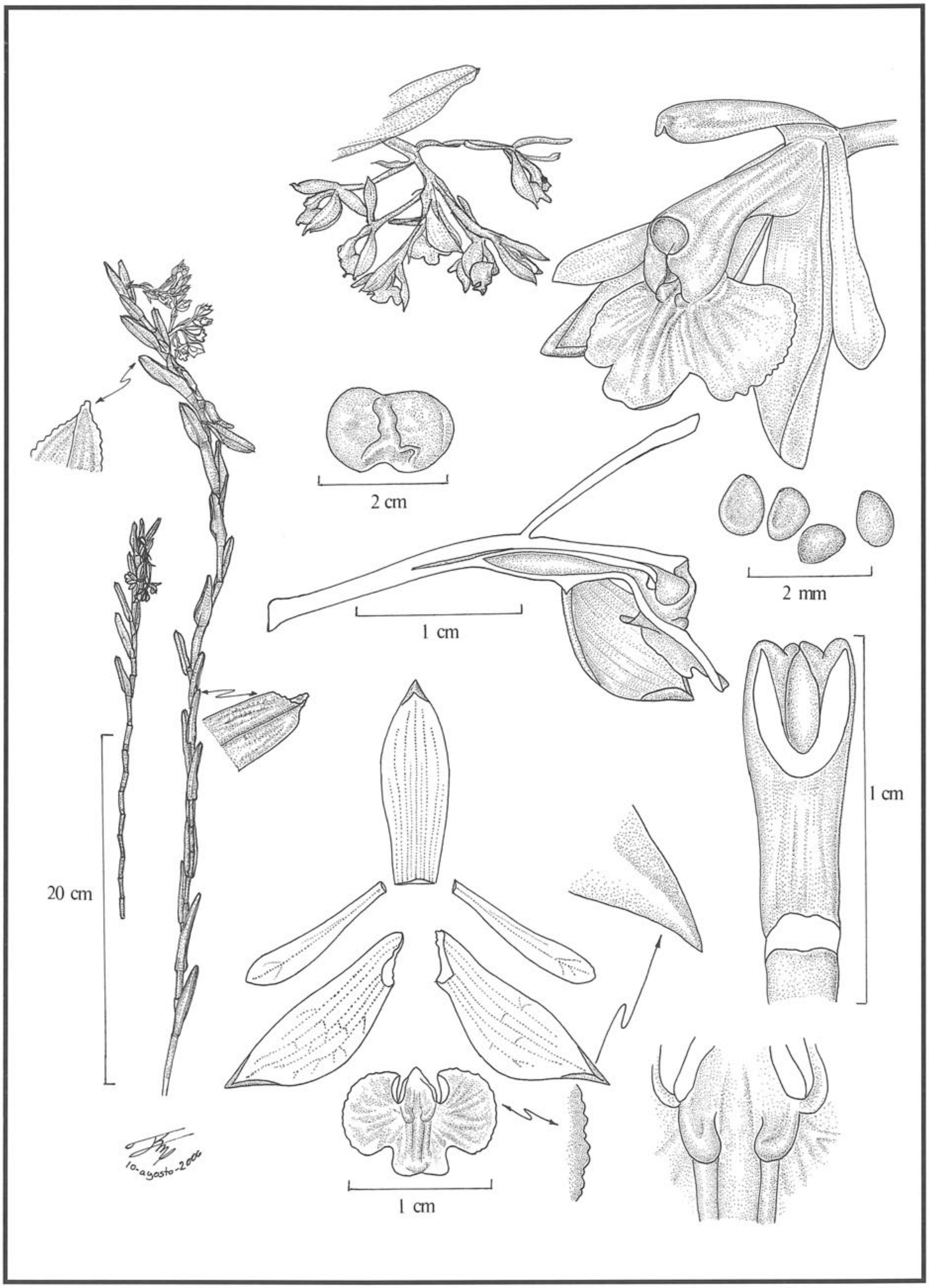
RECOGNITION: *Epidendrum stenoselaginella* belongs to the Epidanthus Group which is characterized by short small, usually scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the terete stems covered with narrow, linear-lanceolate leaves, flowers laxly distributed on the inflorescence, ovate-triangular sepals, and the triangular-cordate lip nearly as wide as it is long, united to the column throughout its length, and the ovary and sepals glabrous. *Epidendrum selaginella* has the stems laterally compressed above, ovate to oblong-ovate leaves, the flowers aggregate at the end of a long inflorescence, the sepals narrowly triangular, and the lip wider than long, united to the basal 1/2 of the column. *Epidendrum astroselaginella* Hágsater & E.Santiago is vegetatively very similar, but the floral segments are spreading, star-shaped, the flowers larger (sepals 3.5-4.2 mm), the lip us longer than wide, with a fleshy thickened keel at the apex; the nectary is wide throughout, not constricted at the perianth, linear petals, and prominent teeth at the apex of the column, which are directed somewhat upwards, in front of the anther-bed



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek στενος, narrow, and *selaginella*, in reference to the narrow leaves of this species when compared to those of *Epidendrum selaginella*.

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EPIDENDRUM STICTOGLOSSUM Hágsater & D.Trujillo **Plate 992**

EPIDENDRUM STICTOGLOSSUM Hágsater *et* D.Trujillo, *sp. nov.*

Type: PERU: Ancash: Prov. Yungay, Huascarán National Park, Quebrada Yanapaccha, a lateral of Quebrada Ranincuray, 9°00'S 77°34'W, 3700-3840 m, 19 IV 1985, ***David N. Smith, Rene Valencia & Alfredo González 10479.*** Holotype: USM! Isotype: CPUN! HUT! MO! (Illustration voucher).

Epidendro sumapacensi Hágsater & E. Santiago simile sed foliis angustioribus erectis, ad caulem subparalellis, labello trilobato luteo cum punctis rubello-purpureis, lobulo medio late subrectangulare minore quam laterales reniformes, latiore quam longiore, divergens.

Hierba terrestre o litófita, simpodial, erecta, 60 a 130 cm de alto. **Raíces** basales en el tallo principal o en la base de los keikies, carnosas, muy gruesas (casi del mismo grosor que el tallo), escasas, blancas, 4-6 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos, ocasionalmente produciendo un keiki de cerca del ápice del tallo, 60-130 x 0.25-0.5 cm. **Hojas** 13-26 (ó más) distribuidas a lo largo del tallo, alternas, articuladas, en posición erecta con respecto al eje del tallo; vaina tubular, estriada y rugosa, de color parduzco, 14-27 x 3.5-7 mm; lámina linear, subaguda, diminutamente apiculada, coriácea, margen eroso dentado en el ápice, 2.2-5.3 x 0.6-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, colgante, pauciflora, laxa, 3-4 cm de largo. **Brácteas florales** de menos de la mitad del largo del ovario, gradualmente más cortas, angostamente triangulares, acuminadas, abrazadoras, 5-12 mm de largo. **Ovario** terete, delgado, gradualmente más amplio hacia el ápice, liso, teñido en su totalidad de rojizo, 14-22 mm de largo. **Flores** 7-9, simultáneas, resupinadas, el labelo siempre orientado hacia el eje de la inflorescencia, sépalos y pétalos dorsalmente púrpura rojizos, ventralmente amarillos densamente manchados de puntos púrpura o rojizos, labelo amarillo con puntos rojizos en la superficie abaxial; columna amarilla; sin datos de fragancia. **Sépalos** libres, oblanceolados, ligeramente cóncavos, agudos, apiculados, carnosos, margen extendido, entero, 9-12 x 3.3-4 mm; el **dorsal** extendido, 9-nervado, los **laterales** entreabiertos, oblicuos, 5-nervados. **Pétalos** entreabiertos, libres, linear oblanceolados, redondeados, 1-nervados, margen extendido, entero, 8-10 x 1.6-1.8 mm. **Labelo** unido a la columna, trilobado, convexo, profundamente cordado en la base, 5 x 7.5 mm; bicalloso, los callos delgados, carnosos y ligeramente cóncavos en el ápice; disco provisto de 3 quillas, la central algo más engrosada que el par lateral, lisas, alargadas cerca del ápice del lóbulo medio; lóbulos laterales reniformes, margen eroso, 3 x 4.5 mm; lóbulo medio menor en tamaño con respecto a los laterales, transversalmente rectangular, ápice truncado, ligeramente emarginado, margen entero a levemente eroso, 1-1.5 x 2-3 mm. **Columna** recta, delgada en la mitad basal y dilatada hacia el ápice, 7-8 mm de largo. **Clinandrio** reducido, margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos; caudículas suaves y granulosas del mismo largo que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando menos de la mitad de la cavidad estigmática. **Nectario** penetrando ligeramente el ovario, justo detrás del perianto, no inflado, liso. **Cápsula** elipsoide, verdosa con la base levemente teñida de rojizo; pedicelo terete, delgado, 9 mm de largo; cuerpo 21-25 x 10-11 mm; cuello apical muy corto, 2 mm de largo.

Terrestrial or lithophytic, sympodial, caespitose **herb. Roots** basal, and from the base kiekies, thick, fleshy. **Stems**, simple, cane-like, terete, thin, straight, producing an occasional kiekie from near the apex of some stems. **Leaves** 13-26 (or more), distributed throughout the stem, alternate, articulate, erect with respect to the stem; sheath tubular, striated and rugose, brownish; blade linear, subacute, minutely apiculate, coriaceous, margin erose-dentate at the apex. **Inflorescence** apical, flowering only once, racemose, nutant, lax-, few-flowered. **Floral bracts** less than half as long as the ovary, gradually shorter, narrowly triangular, acuminate. **Ovary** terete, thin, gradually thicker towards the apex, smooth, totally tinged reddish. **Flowers** 7-8, simultaneous, resupinate, the lip always towards the axis of the inflorescence, sepals and petals dorsally reddish purple, abaxially yellow densely spotted with reddish dots, lip yellow, dotted with reddish purple dots, column yellow. **Sepals** free, oblanceolate, slightly concave, acute, apiculate, fleshy, margin entire, spreading; the dorsal sepal spreading, 9-veined, the lateral sepals partly spreading, oblique, 5-veined. **Petals** partly spreading, free, linear-oblanceolate, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, convex, base deeply cordate, somewhat wider than long; bicallose, the calli thin, fleshy, slightly concave towards the apex; disc provided with 3 keels, the central keel somewhat thicker than the lateral pair, smooth, prolonged to near the apex of the midlobe; lateral lobes reniform, margin erose; midlobe smaller than the lateral lobes, transversely rectangular, apex truncate, slightly emarginate, margin entire to slightly erose. **Column** straight, basal half thin, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles soft and granulose, as long as the pollinia. **Rostellum** apical, slit. **Nectary** slightly penetrating the ovary just behind the perianth, not inflated, smooth. **Capsule** ellipsoid, pedicel terete, thin; apical neck very short.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Peru, from the Cordillera Blanca in the department of Ancash and north in the department of La Libertad, on the Cordillera Occidental. Epiphytic or lithophytic, at 3600-4200 m altitude. Flowering in April to July and December to January.



5

RECOGNITION: *Epidendrum stictoglossum* belongs to the Scabrum Group, Soratae Subgroup which is characterized by the branching habit starting on a monopodial primary stem, infundibuliform, rugose leaf-sheaths, lanceolate, aristate, acute leaves, racemose subcapitate inflorescence on a short, thin peduncle, and the bicallose lip. The species is recognized by the scarcely branching, erect stems, linear leaves erect, subparallel to the stem, with apical margin erose-dentate, yellow flowers somewhat tinged purple, lip dotted in reddish-purple, convex, 3-lobed, transversely subrectangular midlobe smaller than the reniform lateral lobes, and petals linear-oblanceolate, narrow. It is somewhat similar to *Epidendrum sumapacense* Hágsater & E.Santiago, which has elliptic leaves, yellow to orange-yellow flowers, an entire, subreniform lip. *Epidendrum erosum* C. Schweinfurth also has an entire, subcordiform-trapezoid lip dotted with purple-pink, and linear-subspatulate petals. The vegetative habit is reminiscent of *Epidendrum stenophyton* Schltr. which, however, has narrower leaves, an entire, rhomboid-elliptic, concave lip, and narrowly linear petals. *Epidendrum connatum* Hágsater & E.Santiago is vegetativamente similar but inflorescence is dense, (to 17 flowers), lateral sepals connate, petals oblanceolate, 3 mm wide, and lip 3-lobed, midlobe ovate.

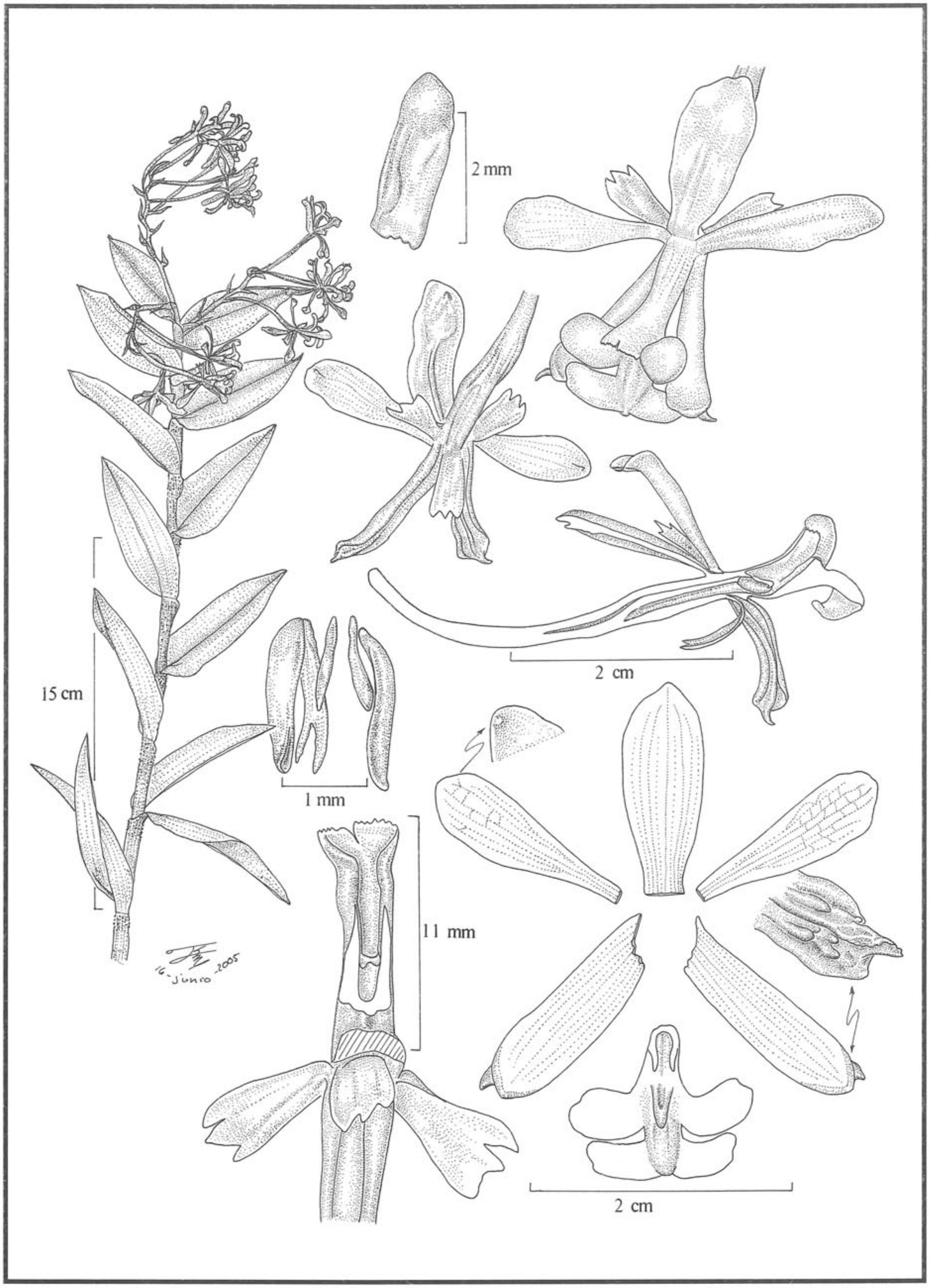
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek στικτος, tattooed, spotted, and γλοσσα, tongue, in reference to the yellow lip distinctly spotted with red-purple dots, characteristic to this species.

REFERENCE: Kolff, H., & K., 1997, as *Epidendrum sp.*, ***Flores Silvestres de la Cordillera Blanca***, p. 100; Instituto de Alta Montaña, Lima, Perú.

Authors: E. Hágsater & D. Trujillo **Illustrator:** R. Jiménez M. **Editors:** E. Hágsater & L. Sánchez S.

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EPIDENDRUM STOLIDIUM Hágsater Plate 993

EPIDENDRUM STOLIDIUM Hágsater, Lankesteriana 5(1): 74. 2005. Basionym: *Oerstedella ornata* Dressler, Orquídea (Mexico City) 8(2): 345. 1982. Type: PANAMA: Chiriquí, "La Chumbada" arriba de Guadalupe (Cerca del Cerro Punta), 2300 m, 18 October 1980, ***R. L. Dressler 5930.*** Holotype: US! Isotypes: AMO MO x2! PMA U. Not *Epidendrum ornatum* Lem., Fl. des Serres Ser. 1: 4: 334b. 1848.

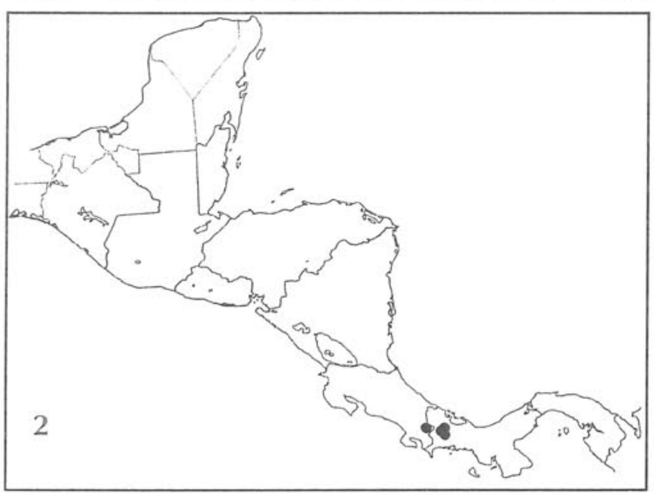
Hierba epífita, cespitosa, ramificada; 30-150 cm de alto. **Raíces** basales, carnosas. **Tallos** ramificados con el tiempo cerca del ápice, tipo caña, teretes, delgados, erectos o tornándose colgantes; 20-30 x 0.3-0.67 cm. **Hojas** 7-12, distribuidas generalmente en la mitad apical del tallo, alternas, articuladas; vainas tubulares, con verrugas prominentes; 9-35 x 3-6.7 mm; lámina lanceolada o angostamente ovada u oblonga, aguda, margen entero; 4-8.5 x 0.8-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada (en el tallo principal) y racemosa (en las ramificaciones), erecta, pauciflora, laxa; 4-7.5 cm de largo; pedúnculo terete, delgado, 7-27 mm de largo; provisto en la base de una bráctea, triangular, acuminada, abrazadora; 10-13 mm de largo; raquis terete, delgado, en zigzag; 20-45 mm de largo. **Brácteas florales** mucho más cortas que el ovario, anchamente triangulares, acuminadas, abrazadoras; 4-10 mm de largo. **Flores** ca. 22, 2-7 por racimo, simultáneas, resupinadas; los sépalos rosa a marrón por fuera, ventralmente rosa pálido a oscuro, los laterales con la mitad interior longitudinal blanca; pétalos rosados, labelo blanco, columna rosada, clinandrio crema con una mancha magenta en forma de coma en cada lóbulo; sin datos de fragancia. **Ovario** terete, delgado, ligeramente inflado justo detrás del perianto, fuertemente carinado distalmente, y prolongado en tres apéndices lobulares alternos con los sépalos, estos lóbulos del ovario verdes, teñidos de rojo, obovados u obtriangulares, truncados, margen eroso a irregularmente dentado; 5-7 mm de largo, el resto del ovario teñido de rosado en la superficie dorsal y crema en la superficie ventral; 30-35 mm de largo. **Sépalos** libres, redondeados, 3-5 carinados por fuera, la carina central alta, terminada en 1 a 3 dientes agudos, 9- nervados, margen entero; 16-19 x 5-8 mm; el **dorsal** extendido, oblanceolado; los **laterales** entreabiertos, oblongos, ligeramente oblicuos. **Pétalos** extendidos, libres, oblanceolado espatulados, obtusos, 3-nervados, las nervaduras laterales muy ramificadas en la mitad apical, dando la apariencia de ser 7-nervados, margen entero; 14-15 x 6-7 mm. **Labelo** unido a la columna, 3-lobado, unguiculado, margen entero; 10-15 x 10.5-14 mm; unicalloso, el callo carnoso, angosto, surcado, provisto de una quilla central baja, muy carnosa, que llega al ápice del lóbulo medio; lóbulos laterales obovado oblongos, obtusos; 6-7 x 4-4.5 mm; lóbulo medio unguiculado (formando un istmo angosto y muy corto en la base), bilobado, los lóbulos divaricados, algo recurvados, cortamente apiculado; 4-6 x 11-12 mm. **Columna** recta, delgada; 4.5-5.5 mm de largo. **Clinandrio** sobrepasando el cuerpo de la columna, en forma de tubo, formando un embudo incipiente, ápice emarginado, bilobado, margen denticulado, 7.5 mm de largo. **Antera** semi botuliforme, con una quilla baja, 4-locular. **Polinios** 4, ovoides oblongos, lateralmente comprimidos, tipo ala de pájaro, el par interior más pequeño, de la mitad del largo de el par exterior; caudículas laminares, angostas, más cortas que los polinios, pardas; sin viscidio. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Lóbulos laterales del estigma** obsoletos. **Nectario** penetrando ca. de ¼ parte del ovario, no inflado. **Cápsula** no vista.

Epiphytic, caespitose, branching **herb. Roots** basal, fleshy. **Stems** branching with age near the apex, cane-like, terete, thin, erect or becoming pendent. **Leaves** 7-12, generally distributed throughout the apical half of the stem, alternate, articulate; sheaths tubular, with prominent warts; blade lanceolate or narrowly ovate or oblong, acute, margin entire. **Inflorescence** apical, that of the main stem racemose to paniculate, the branches racemose, lax, few-flowered; peduncle terete, thin; rachis terete, thin, zigzag. **Floral bracts** much shorter than the ovary, widely triangular, acuminate. **Flowers** ca. 22, 2-7, simultaneous, resupinate; sepals pink to maroon without, light to dark pink within, the lateral sepals white on the inner longitudinal half, petals pink, lip white, column pink, clinandrium-hood cream-colored with a comma-shaped, magenta, spot on each lobe. **Ovary** terete, thin, slightly inflated and ridged towards the apex, and prolonged into three lobular appendages, alternate to the sepals, these lobules of the ovary green, heavily suffused with red, obovate or obtriangular, truncate, the ventral lobe bilobed, margin erose or irregularly dentate. **Sepals** free, rounded, strongly, distally 3-5 carinate without, the median keel terminating in 1-3 acute, fleshy teeth, 9-veined, margin entire; the **dorsal** spreading, oblanceolate; the **laterals** partly spreading, oblong. **Petals** spreading, free, oblanceolate-spatulate, obtuse, 3-veined, margin somewhat sinuous. **Lip** united to the column, 3-lobed, unguiculate, margin entire; callus single, narrow, channeled; lateral lobes oblong-obovate, obtuse; midlobe clawed, 2-lobed, the lobes divaricate, somewhat recurved, the apical sinus apiculate, with a central, thickened keel running down to the apicule. **Column** straight, thin, apex somewhat petaloid. **Clinandrium-hood** tube shaped, forming a short funnel, surpassing the body of the column and about as long as the body itself, apex emarginate, bilobed, margin denticulate. **Anther** semi-sausage shaped, with a low keel, 4-celled, **Pollinia** 4, oblong-ovoid, laterally compressed, bird-wing type, unequal, the inner pair about half the size of the outer pair; caudicles laminar, narrow, shorter than the pollinia, brown; without any viscidium. **Rostellum** perpendicular to the axis of the column, forming a wide sinus. **Nectary** penetrating about ¼ of the ovary, not inflated.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to the Cerro Punta area in Chiriquí, Panama, growing epiphytic in wet montane forest, 1800-2500 m altitude. Flowering in September and October.

RECOGNITION: *Epidendrum stolidium* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is perpendicular to the axis of the column instead of parallel, forming a wide, open sinus, and without a viscidium, and the Aberrans Subgroup, which is characterized by the pink flowers, and the column with an elongate cylindrical clinandrium hood, the pollinia bird-wing type unequal and the caudicles laminar. The species is recognized by the pink and white flowers, 3 prominent, green lobes which arise from the ovary behind and alternate to the sepals which are dorsally ornamented with dentate keels; the elongate, cylindrical clinandrium-hood is cream-colored and funnel-shaped at the end with a pair of comma-shaped magenta spots. The other species in the Aberrans subgroup; *E. centropetalum* Rchb. f., *E. pansamalae* Schltr. and *E. crescentilobum* Ames among them, do not have the alternate calyculum lobes behind the sepals which are dorsally glabrous. *Epidendrum exasperatum* Rchb. f. has smaller flowers (sepals 10-13 mm long), greenish brown with a white lip and the sepals are dorsally aculeate-verrucose; the short non-petaloid, clinandrium-hood.



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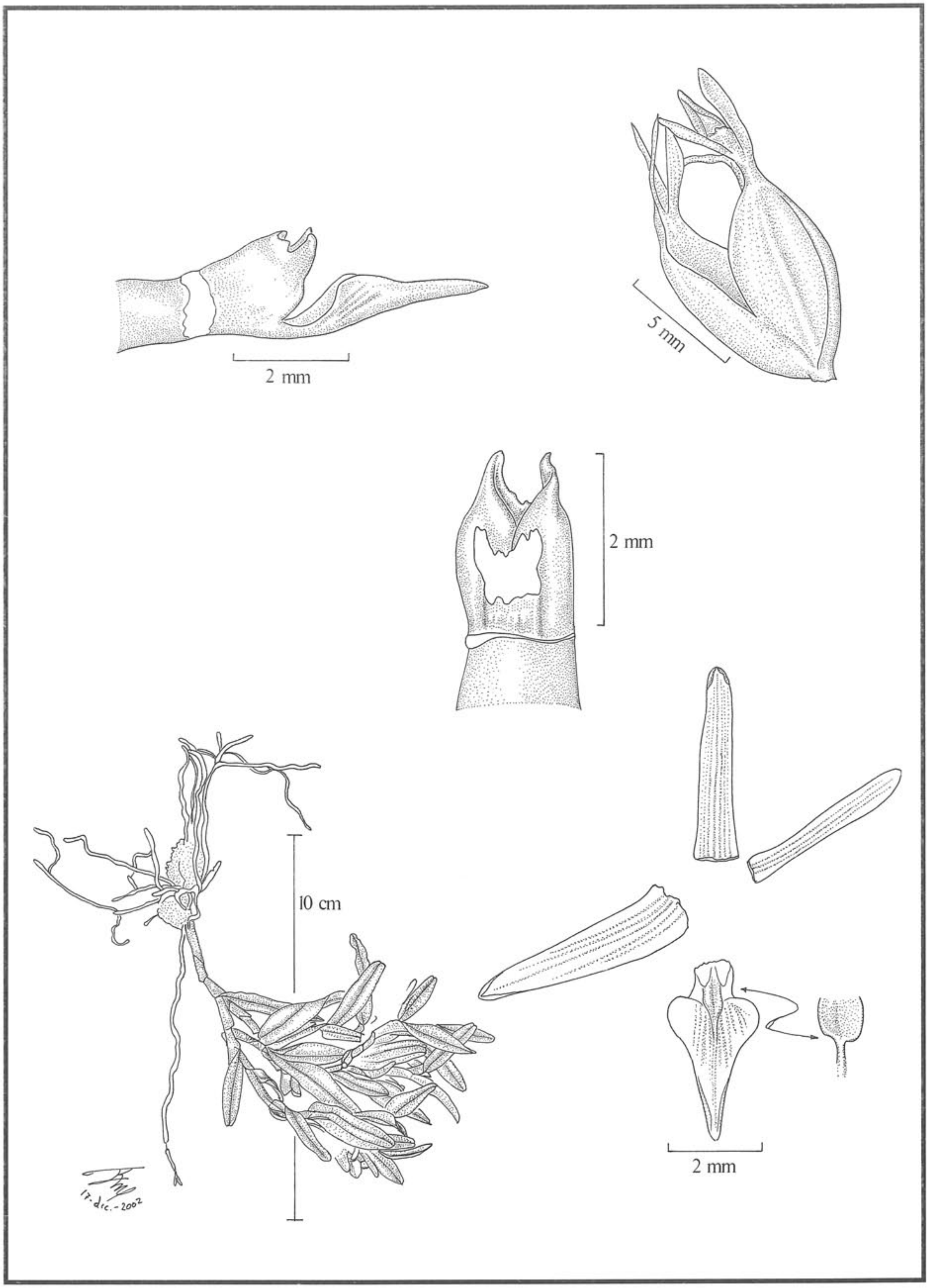
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: The name is derived from the Greek στολιδι, ornamented, in reference to the peculiar appendages at the apex of the ovary. The floral buds bring to mind South Pacific war clubs, carved for complexity and adornment, rather than as mere head-crushers. The Latin *ornata* is previously occupied in the genus *Epidendrum*.

REFERENCES: Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama**, Cornell University Press, p. 89. Hágsater, E., & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. From *Oerstedella* Rchb.f, **Lankesteriana** 5(1): 73.

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EPIDENDRUM SWARTZII (Rchb.f. ex Griseb.) Hágsater **Plate 994**

EPIDENDRUM SWARTZII (Rchb.f. ex Griseb.) Hágsater, *comb. et stat. nov.*

Basionym: *Epidendrum strobiliferum* Rchb.f. var. *swartzii* Rchb. f. ex Griseb., Fl. Brit. W. Ind. Is. 618. 1864. Type: Jamaica: New Carmel, ***Wullschägel 1085.*** Holotype: W-R 38963! (Illustration voucher). Sketch of the flower by Reichenbach, W-R 49964!
Swartz, O., Fl. Ind. Occ. 3: 1506. 1806. [as Varietas…]

Epidendro strobilifero Rchb.f. simile sed planta minor fruticosa, floribus majoribus labello triangulari sagittato numerosas venas incrassatas ferenti, recedit.

Hierba pequeña, epífita, colgante, monopodial, ramificada arriba, de 8-10 cm de alto incluyendo la inflorescencia. **Raíces** basales, delgadas, flexuosas, hasta 1 mm de grosor. **Tallos** tipo caña, ramificados, producidos de los entrenudos apicales del tallo anterior, teretes en la base, algo aplanados hacia el ápice, más o menos sinuosos, las ramas de tamaño variable, 3-6 x 0.1-0.2 cm. **Hojas** 6-10 en el tallo principal, 2-6 en las ramas, erectas, distribuidas a todo lo largo de los tallos, articuladas, caedizas; vaina tubular, rugosa, 0.5-1.0 x 0.1-0.2 cm; lámina angostamente elíptico lanceolada, coriácea, ápice desigualmente bilobado, aristado, 1.0-2.5 x 0.3-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, dística, 1.2-1.5 cm de largo. **Brácteas florales** más largas que el ovario, conduplicadas, imbricadas, oblongo ovadas, obtusas, margen hialino, escariosas, 4.5-7 mm de largo. **Flores** 3, sucesivas, entreabiertas, sin datos de color, fragancia no registrada. **Ovario** inflado en la mitad apical, formando una vesícula muy prominente, sulcado, 4.5-5.0 mm de largo. **Sépalos** entreabiertos, lanceolados, redondeados, nervaduras gruesas, 4.0-4.7 x 0.8-1.1 mm; el dorsal 7-nervado, los laterales algo oblicuos, 5-nervados. **Pétalos** lineares, ligeramente obtusos, 3-nervados, 3.8-4.0 x 0.3-0.5 mm. **Labelo** unido a la columna de manera oblicua, entero, triangular sagitado, acuminado, cordiforme en la base, 3.5-3.8 x 2.0-2.2 mm; unicalloso, en forma de "Y", con numerosas venas engrosadas en el disco. **Columna** recta, corta y gruesa, ensanchada hacia el ápice, y terminada en un par de alas agudas, 2.0 mm de largo. **Clinandrio** reducido, entero, margen dentado. **Antera** no vista. **Polinios** no vistos. **Rostelo** no visto. **Nectario** no visto. **Lóbulos laterales del estigma** no vistos. **Cápsula** subglobosa, cuerpo 8.5-9.0 x 4.0-4.5 mm, rostro 2.0-2.2 x 1.0-1.2 mm.

Compact, epiphytic, pendent, monopodial **herb**, branching above. **Stems** cane-like, branched, the new stem produced from the upper internodes of the previous stem, terete at the base, somewhat laterally compressed toward the apex, more or less sinuous. **Leaves** 6-10 on the main stem, fewer on the branches, erect, narrowly elliptic-lanceolate, unequally bilobed, aristate, coriaceous. **Inflorescence** apical, racemose, distichous. **Floral bracts** longer than the ovary, conduplicate, oblong-ovate, obtuse. **Flowers** 3, successive. **Ovary** inflated ventrally towards the apex, sulcate, terete. **Sepals** partly spreading, lanceolate, rounded, dorsal sepal 7-veined, the lateral sepals somewhat oblique, 5-veined. **Petals** linear, obtuse, 3-veined. **Lip** entire, obliquely united to the column, triangular-sagitate, acuminate, the base cordate; callus "Y" shaped, with prominent veins on the disc. **Column** straight, winged, the wing triangular, acute. **Clinandrium-hood** reduced, entire, margin somewhat dentate. **Capsule** subglobose.

DISTRIBUTION AND ECOLOGY: Known from Jamaica to Dominican Republic. Epiphytic, on trees, from 510 to 700 m altitude. Flowering from September to January.

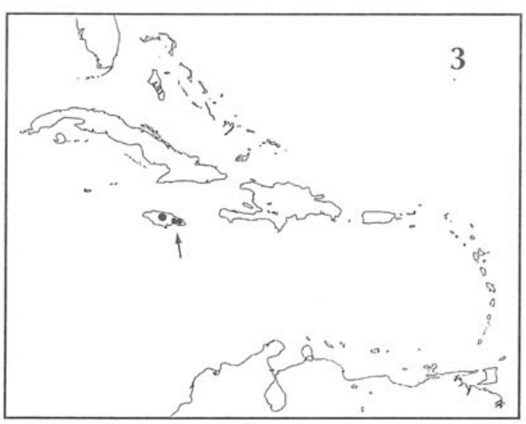
OTHER SPECIMENS: JAMAICA: without locality, *O. Swartz s.n.*, (as *E. fruticulosum* [Swartz, herbarium name], not *E. fruticulosum* Schltr.) G! S! **St. Thomas:** Mansfield, 15-19 IX 1908, *Britton 3563*, NY! Ramble, Claremont, 1700 ft, 22 I 1898, *Fawcett 7245a*, US! **DOMINICAN REPUBLIC: Barahona**: Santo Domingo, 700 m, 01 X 1910, *Fuertes 639*, G!

RECOGNITION: *Epidendrum swartzii* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Repens Subgroup, which has strictly pendent, plants, with small leaves, less than 2.5 cm long. The species can be recognized by the pendent, compact, bush-like plants, 8-10 cm tall, produced on a single, basal stem which is branched above, inflorescence with 3 successive flowers, sepals lanceolate, rounded, 5-7-veined, ovary inflated ventrally towards the apex, sepals 4.0-4.7 mm long, petals linear, obtuse, 3-veined, lip triangular-sagitate, acuminate, nearly twice as long as it is wide, with several prominent veins on the disc, column winged, the wings triangular, acute. It is similar to *Epidendrum strobiliferum* Rchb.f. but that species has creeping plants which usually form large branching mats, 12-30 cm long, sepals 3-4 mm long, the lip is cordiform, triangular, about as wide as it is long. *Epidendrum repens* Cogn. and *E. brachyrepens* Hágsater, are 1-flowered, the flowers larger (sepals 6-8 mm long), the ovary is not inflated and the lip is ecallose. *Epidendrum zanoni* D.D. Dod has larger plants and flowers, the leaves 2.9-6.5 cm long, and the sepals 5-9.5 mm long.

CONSERVATION STATUS: (DD). Data deficient. Apparently rare.

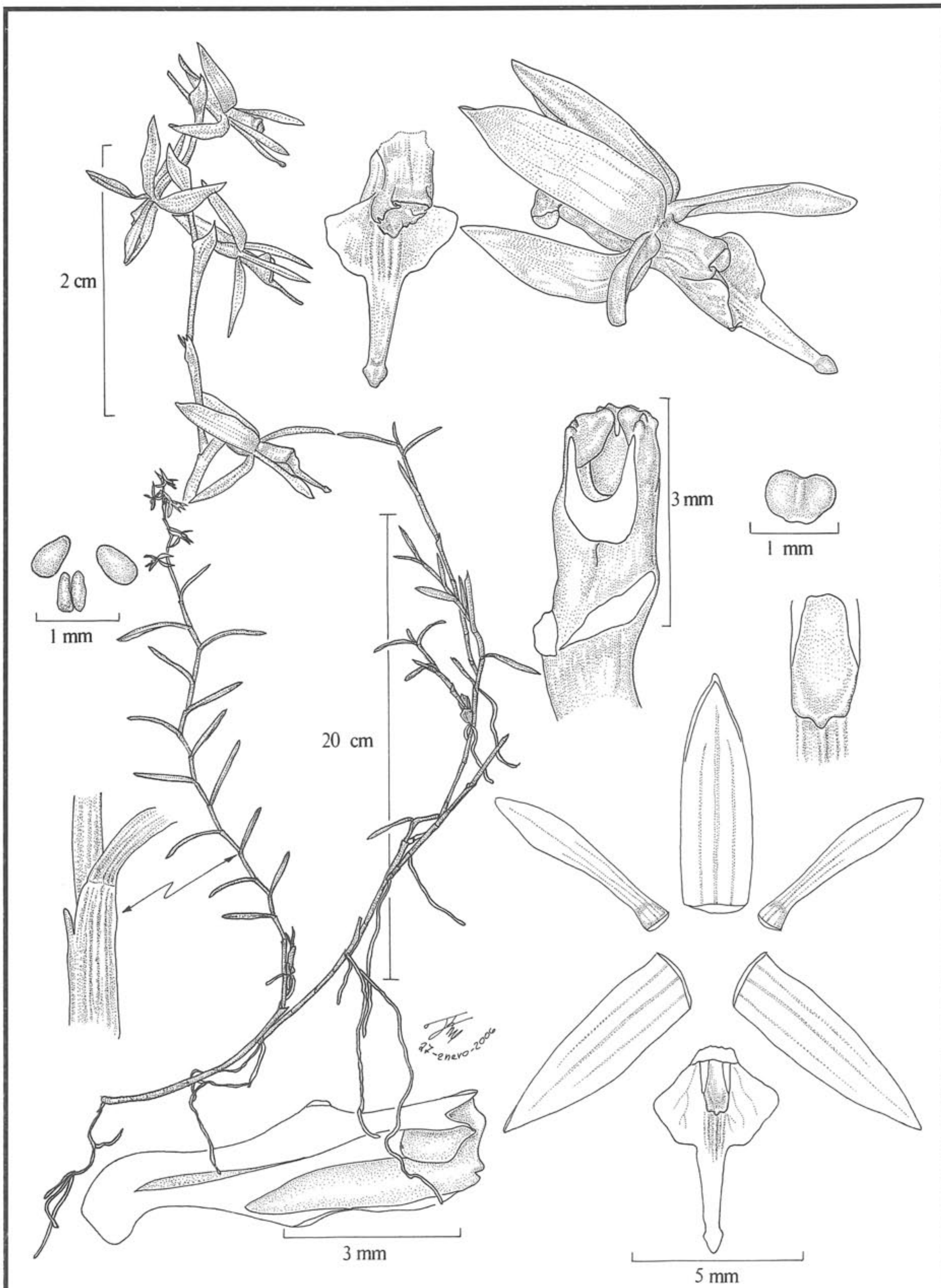
ETYMOLOGY: In honor of Olof Swartz, one of the first systematic collectors to visit the Antilles in the 18th century. Many of his collections are housed in S, the Royal Botanical Museum in Stockholm, Sweden, and the BM, British Museum in London.

REFERENCES: Grisebach, A.H.R., 1864. **Flora of the British West Indian Islands**. p. 618. London. Swartz, Olof, 1806. **Flora Indiae Occidentalis** 3: 1505.



Author: E. Hágsater Illustrator: R. Jiménez M. Editors: E. Hágsater & L. Sánchez S.

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EPIDENDRUM TALAMANCANUM (Atwood) Mora Retana & J.García

Plate 995

EPIDENDRUM TALAMANCANUM (Atwood) Mora Retana & J. García, Brenesia 33: 124. 1990.

Basionym: *Epidanthus talamancana* Atwood, Icon. Pl. Trop. 14: pl. 1315. 1989. Type: COSTA RICA: San José: Cordillera de Talamanca, near Villa Mills, 2500 m, 11 May 1956, ***Louis O. Williams 19876.*** Holotype: SEL! (Illustration voucher.)

Hierba epífita a raramente terrestre, simpodial, escandente, 14-30 cm de alto. **Raíces** en la base de cada tallo, escasas, filiformes, blancas, 0.2-0.7 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales de tallos anteriores, tipo caña, teretes, delgados, erectos, rectos, 9-25 x 0.05-0.13 cm. **Hojas** 6-14, distribuidas a todo lo largo del tallo, dísticas, articuladas, algo carnosas, comúnmente erecto extendidas, las basales generalmente caedizas; vaina tubular, finamente estriada, 6-21 x 0.5-1.3 mm; con una lígula muy pequeña del lado opuesto de la lámina, triangular, subaguda, conduplicada, 3 mm de largo; lámina linear a linear lanceolada, subaguda, subcoriácea, margen entero, 0.9-3.2 x 0.7-2.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, laxa, erecta, 3.5-8 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 17-28 mm de largo; ocasionalmente provisto en la parte media de una bráctea semejante a las florales, angostamente lanceolada, tubular en la base, aguda en el ápice, 6-7 mm de largo; raquis ligeramente fractiflexo. **Brácteas florales** más cortas que el ovario, ovado triangulares, tubulares en la base, agudas en el ápice, 3-5 mm de largo. **Ovario** terete, delgado, no inflado, liso, 5 mm de largo. **Flores** 6-10, sucesivas, resupinadas, carnosas, dísticas, comúnmente crema o blancas (ocasionalmente difuminadas de morado), raramente moradas; sin datos de fragancia. **Sépalos** reflexos, libres, oblongo triangulares, agudos, con una quilla dorsal, 3-nervados, margen extendido, entero, 4.2-7 x 1.5-2.2 mm; los **laterales** algo oblicuos. **Pétalos** porrectos, paralelos a la columna, libres, linear oblanceolados, agudos, 3-nervados, ligeramente dilatados y engrosados en la base, margen extendido, entero, 4-6 x 0.8-1 mm. **Labelo** unido a la columna, 3-lobado, ligeramente cuneado en la base, margen entero, 3.5-5.5 x 3.5-4.5 mm; unicalloso, el callo laminar, truncado, diminutamente apiculado, disco provisto de 3 quillas, delgadas, bajas; lóbulos laterales insertados cerca de la base de la columna, abrazando a la columna en posición natural, oblicuamente triangulares, los ángulos redondeados, 1.5-2.3 x 2-2.4 mm; lóbulo medio triangular oblongo, subagudo, algo carnoso en el ápice, 1.5-3 mm de largo. **Columna** muy corta, recta, gruesa, 1.8-2 mm de largo. **Clinandrio** corto, margen denticulado. **Antera** reniforme, 2-locular. **Polinios** 2, obovoides. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ¼ del ovario, amplio, no inflado, no ornamentado. **Cápsula** angostamente elipsoide, con el perianto persistente; pedicelo sésil; cuerpo 9 x 2.3 mm; cuello apical ausente.

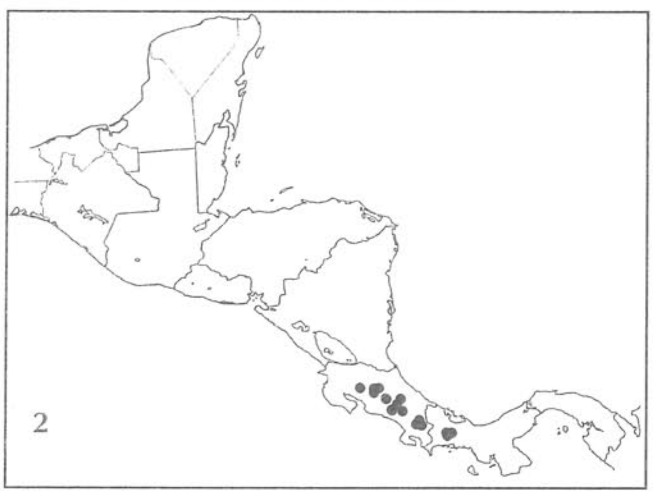
Epiphytic, rarely terrestrial, sympodial, scandent **herb. Roots** from the base of each stem, scarce, filiform, white. **Stems** simple, produced from the basal internodes of the previous stem, cane-like, terete, thin, erect, straight. **Leaves** 6-14, distributed throughout the stems, alternate, articulate, more or less fleshy, commonly erect-spreading, the basal leaves generally deciduous; sheath tubular, minutely striated, with a small ligule, narrowly triangular, subacute, opposite the blade; blade linear to linear-lanceolate, subacute, subcoriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, distichous, secund, lax, erect; peduncle laterally compressed, straight; rarely provided in the middle with a bract similar to the floral bracts, narrowly lanceolate, acute; rachis fractiflex. **Floral bracts** shorter than the ovary, ovate-triangular, acute. **Ovary** terete, thin, not inflated, smooth. **Flowers** 6-10, successive, resupinate, fleshy, distichous, usually cream colored or white, occasionally tinged purple, rarely purple. **Sepals** reflexed, free, oblong triangular, acute, with a dorsal keel, 3-veined, margin entire, spreading; the lateral sepals somewhat oblique. **Petals** porrect, parallel to the column, free, linear-oblanceolate, acute, 3-veined, slightly dilated and thickened at the base, margin entire, spreading. **Lip** united to the column, 3-lobed, slightly cuneate at the base, margin entire; callus single, laminar, truncate, minutely apiculate, disc provided with 3, thin, low keels; lateral lobes inserted near the base of the column, embracing the column in natural position, obliquely triangular, the corners rounded; midlobe triangular-oblong, subacute, apex somewhat fleshy. **Column** very short, straight, thick. **Clinandrium-hood** short, margin denticulate. **Anther** reniform, 2-celled. **Pollinia** 2, obovoid. **Rostellum** apical, slit. **Nectary** penetrating 1/4th of the ovary, wide, not inflated, smooth. **Capsule** narrowly ellipsoid, with a perianth persistent.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from the Cordilleras Central and Talamanca in Costa Rica and western Panama, epiphytic or rarely terrestrial at 850-2750 m altitude. Flowering from January through October.

RECOGNITION: *Epidendrum talamancanum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the tall plants (14-30 cm tall), with linear to linear-lanceolate leaves, 0.7-2.3 mm wide, flowers generally white to cream-colored, sepals reflexed (4.2-7 mm long) and the petals porrect, linear-oblanceolate, dilated and thickened at the base but not auriculate, the 3-lobed lip with a single callus and 3 low keels, the lateral lobes triangular-rounded. It is very similar to *Epidendrum muscicolum* Schltr. which has plants of the same size, but narrower, acicular leaves (0.5-1 mm wide), somewhat shorter sepals, (3-5[6] mm long), the petals linear-oblong, with a prominent, fleshy, auriculate, circular knob at the base, the lip similarly lobed, but with a single low keel in front of the callus.

CONSERVATION STATUS: DD. Data deficient.


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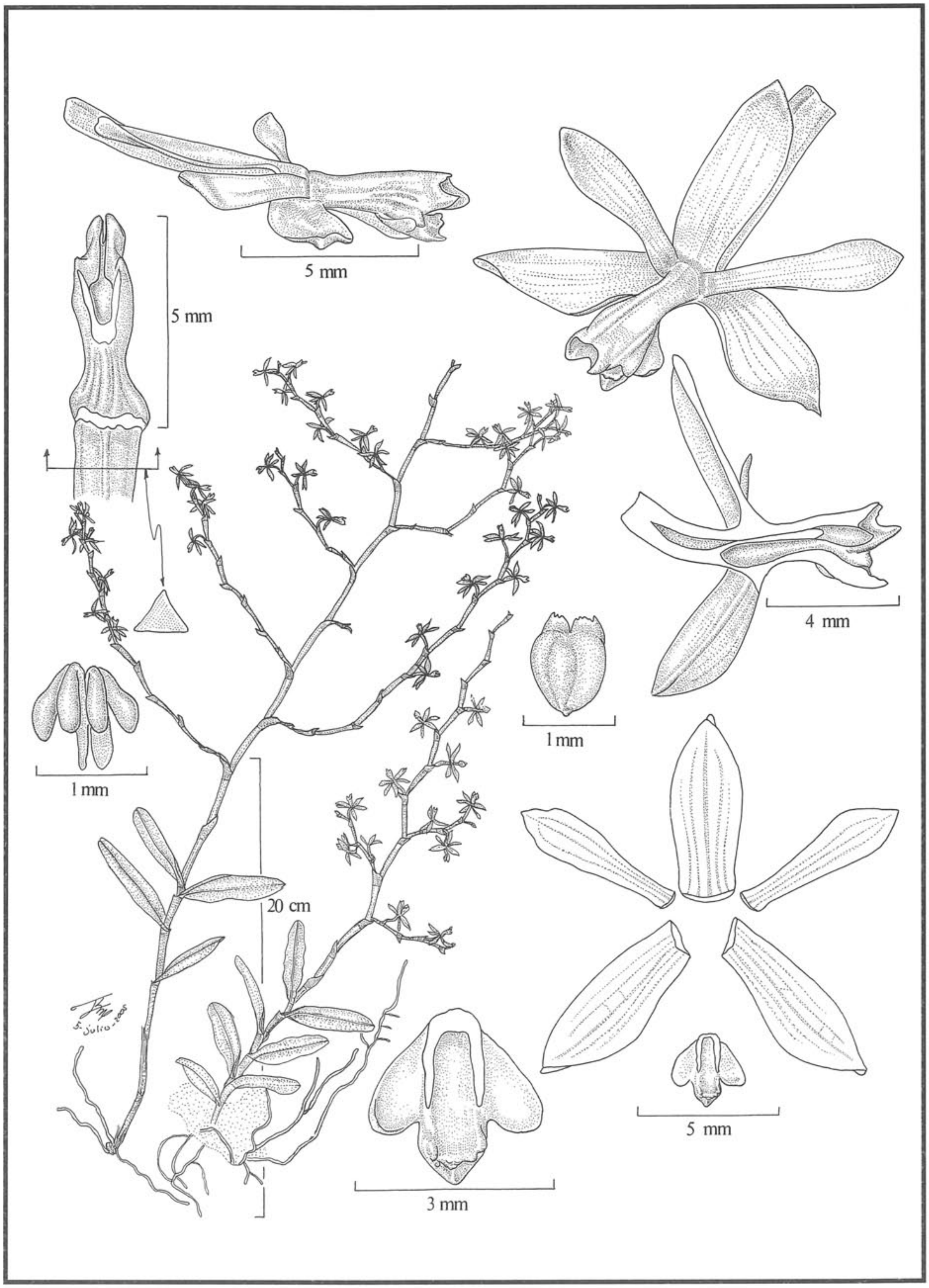
ETYMOLOGY: In reference to the Cordillera de Talamanca, which runs along the continental divide in eastern Costa Rica, where the pretype was collected.

NOTE: The illustration published as *Epidendrum talamancanum* by Barringer in his revision of *Epidanthus* (1991) is based on the habit of *Todzia 281* (F!) but the flowers and detail of the lip appear to be imaginary, as the flowers on the specimen are clearly smaller, with the sepals reflexed and the petals porrect; the lip of the species has triangular, rounded lateral lobes, and none of the species has rounded lateral lobes projecting forward as shown. The specimens studied by Barringer at F (*Burger 6987, Lellinger 1058, Lent 1166, Todzia 281* and *Williams 24170*) are annotated as *Epidanthus rhizomatus* Barringer, a herbarium name which has never been published.

REFERENCES: Barringer, K. 1991, **A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae),** Brittonia 43(4): 250-251. Dressler, R. L. 1983, **Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá,** Orquídea (Mexico City) 9(1): 13-19. Hágsater, E. 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 304, San José C.R. Editorial de la Universidad de Costa Rica.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM TENUISULCATUM (Dressler) Hágsater **Plate 996**

EPIDENDRUM TENUISULCATUM (Dressler) Hágsater, Orquídea (Mexico City) 13(1-2): 217. 1993. Basionym: *Neowilliamsia tenuisulcata* Dressler, Orquídea (Mexico City) 8(1): 29. 1981. Type: PANAMÁ: Coclé, cerca del Aserradero El Copé, a unos 8 km al norte de El Copé, 12 August 1977, ***Robert L. Dressler 5673***. Holotype: US!

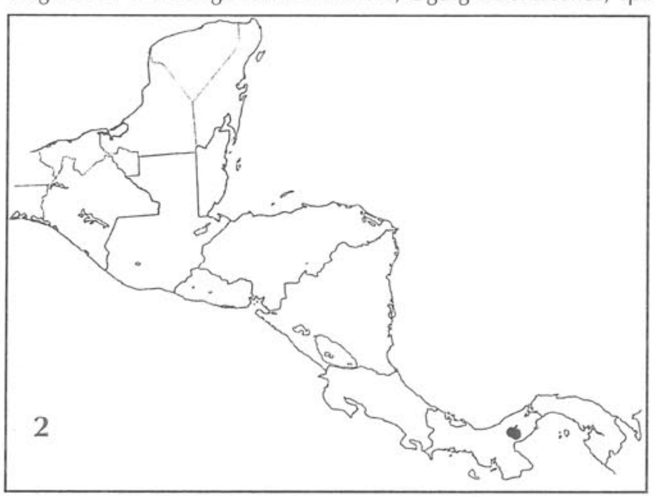
Hierba epífita, simpodial, cespitosa, 18-58 cm de alto. **Raíces** producidas en la basales de los tallos, escasas, delgadas. **Tallos** sencillos, producidos de los entrenudos basales de tallos anteriores (más viejos), tipo caña, lateralmente aplanados, delgados, erectos, rectos, 4.5-12 x 0.2-0.4 cm; cubiertos hacia la base por vainas tubulares, no foliáceas, fibrosas con el tiempo, 21-27 mm de largo. **Hojas** [1] 4-7, distribuidas en la mitad apical de los tallos, alternas, articuladas; vaina tubular, 5-20 x 2-4 mm; lámina angostamente ovada a oblongo elíptica, obtusa, diminutamente apiculada, subcoriácea, margen entero, 2.3-6 x 0.6-2.3 cm; con una lígula del lado opuesto de la lámina, triangular, subaguda, 0.6-0.7 mm de largo. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, laxa, erecta, 14-50 cm de largo; pedúnculo corto, lateralmente aplanado, ancipitoso, recto, 2-5 cm de largo; provisto en la parte media de 1 o 2 brácteas triangulares, agudas, conduplicadas, 8-20 mm de largo; raquis lateralmente aplanado, ancipitoso, bialado, fractiflexo, 12-20 cm de largo. **Brácteas florales** ca. de 1/3 del largo del ovario (o menos), triangulares, agudas, conduplicadas, ancipitosas, amplexicaules, 3-6 mm de largo. **Ovario** triquetro, delgado, no inflado, con tres quillas delgadas, decurrentes a todo lo largo del mismo, 7-8 mm de largo. **Flores** 12-55, la mayoría abierta de manera simultánea (aunque las apicales presentes aún en botón floral), no resupinadas, carnosas, sépalos y pétalos pardos a amarillo pardos con el ápice amarillo, labelo y columna verdes en la base y blancos en el ápice tornándose amarillentos con el tiempo; sin datos de fragancia. **Sépalos** extendidos, libres, elípticos, agudos a acuminados, con una quilla dorsal carnosa, 5-nervados, margen extendido, entero, 6-7 x 2.5 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, angostamente oblanceolados, agudos, 3-nervados, margen extendido, entero, 6 x 1.5 mm. **Labelo** unido a la columna, 3-lobado, base cuneada, la lámina extendiéndose desde la mitad de la columna, margen entero, 2.5 [5] x 2.5 mm; unicalloso, el callo muy carnoso, trilobado, con los lobos redondeados, los laterales altos, en forma de quillas, el lobo central bajo, todos alargados hasta la mitad o cubriendo casi en su totalidad la superficie del lóbulo medio; desprovisto de quillas; lóbulos laterales triangulares, obtusos, insertados a un ángulo de 45° y unidos casi en su totalidad a la columna, 0.8-1 x 1.5-1.7 mm; lóbulo medio triangular, agudo, 1 x 0.8 mm. **Columna** larga, recta, delgada, sobrepasando el labelo, el ápice formando una rajadura ventral, larga, entre el ápice de la antera y la apertura arriba del callo del labelo, 4 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular, obovoide, con una quilla dorsal muy prominente. **Polinios** 4, largos, angostamente obovoides, lateralmente comprimidos, el par interior algo mas corto; caudículas 2, laminares, duras, del doble del largo de los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, apenas penetrando el perianto, no inflado, no ornamentado. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** produced from the base of the stems, scarce, thin. **Stems** simple, produced from the basal internodes of the previous stems, cane-like, laterally compressed, thin, erect, straight; covered towards the base by tubular, non-foliaceous sheaths. **Leaves** [1] 4-7, distributed along the apical half of the stems, alternate, articulate; sheaths tubular; blade narrowly ovate to oblong-elliptic, obtuse, minutely apiculate, subcoriaceous, margin entire; with an ligule opposite the blade, triangular, subacute. **Inflorescence** apical, flowering only once, paniculate, lax-flowered, erect; peduncle short, laterally compressed, ancipitose; provided in the middle with 1-2 triangular, acute, conduplicate bracts; rachis laterally compressed, ancipitose, two-winged, zigzag. **Floral bracts** about 1/3[rd] the length of the ovary or less, triangular, acute, conduplicate, ancipitose. **Ovary** triquetrus, thin, not inflated, with 3 thin, decurrent keels running its whole length. **Flowers** 12-55, most of the open simultaneously (though the apical ones still in bud), non-resupinate, fleshy, sepals and petals brown to yellowish brown with the apex yellow, column and lip green at the base, white at the apex, turning yellowish with time. **Sepals** spreading, free, elliptic, acute to acuminate, with a fleshy dorsal keel, 5-veined, margin spreading, entire; lateral sepals oblique. **Petals** spreading, free, narrowly oblanceolate, acute, 3-veined, margin spreading, entire. **Lip** united to the basal half of the column, 3-lobed, base cuneate, spreading from the middle of the column, margin entire; callus single, very fleshy, 3-lobed, the lobes rounded, the lateral lobes high, keel-shaped, the midlobe low, all the callus lobes covering half or nearly the whole surface of the midlobe of the lip; lateral lobes of the lip triangular, obtuse, inserted at a 45° angle and united nearly throughout to the column; midlobe triangular, acute. **Column** long, straight, thin, prominently surpassing the lip, the apex forming a ventral, narrow slit, between the apex of the anther and the callus of the lip. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, obovoid, with a very prominent dorsal keel. **Pollinia** 4, long, narrowly obovoid, laterally compressed, unequal, the inner pair somewhat shorter; caudicles 2, laminar, hard, twice as long as the pollinia. **Rostellum** apical, slit. **Nectary** shallow, barely penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic from central Panama, near the summit of the cordillera at 720-800 m altitude. Flowering in Agosto to October.

RECOGNITION: *Epidendrum tenuisulcatum* belongs to the Neowilliamsia Group characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, usually non-resupinate flowers, flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized by the short stems, (4.5-12 cm long) with a large, paniculate inflorescence up to 50 cm tall, small, yellowish brown flowers with a white lip, the lip 3-lobed with the lobes subequal and traingular, ovary triquetrus. *Epidendrum epidendroides* (Garay) Mora-Retana & J.García also has a triquetrus ovary but taller stems (12-28 cm long), a smaller, racemose to paniculate inflorescence, and somewhat large flowers (sepals 11-14 mm long), the lip 3-lobed with the apical half of the midlobe linear. *Epidendrum bicuniculatum* Hágsater & E. Santiago has a racemose, zigzag inflorescence, spatulate, rounded petals, the lip spreading the base of the column, obovate in outline and with a very small, narrow, triangular midlobe, and somewhat larger flowers, the sepals 10 mm long.



NOTE: In nearly all species of *Epidendrum* the lip expands from the apex of the column, or from where the union of the column and the claw of the lip end. However in this species, the lip expands from the middle of the column, and the union of the column to the lip extends well beyond, to about the middle of the lip or beyond. In *E. epidendroides* and *E. bicuniculatum* the lip expands from the base of the column.

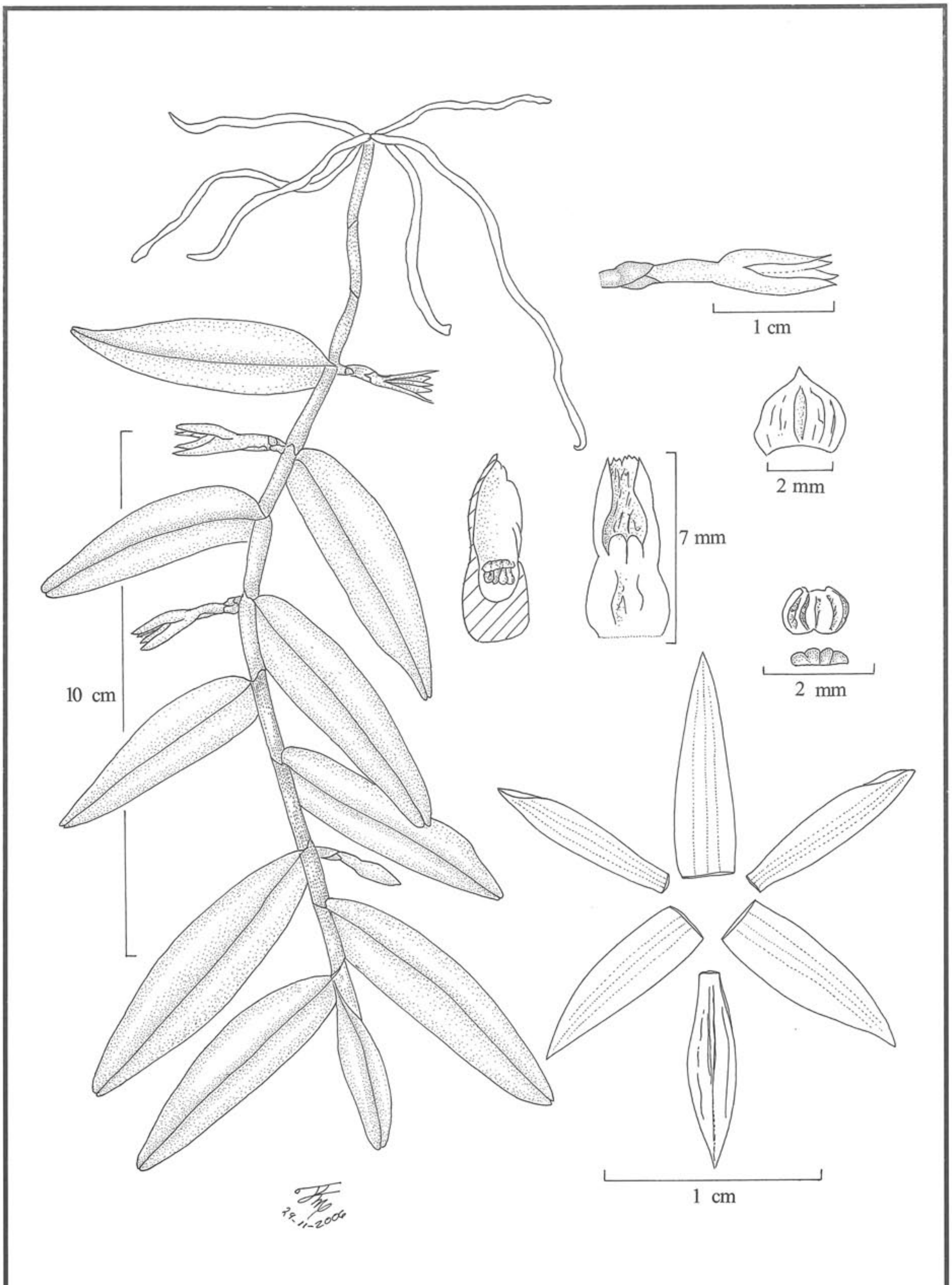
CONSERVATION STATUS: DD. Data deficient. Apparently rare and highly local.

ETYMOLOGY: From the Latin *tenui-*, slender, thin, and *sulcatus*, grooved, furrowed, in reference to the narrow slit at the apex of the column, and which is probably important in the pollination.

REFERENCES: Dressler, R. L., 1981, **El género Neowilliamsia** Garay, Orquídea (Mexico City.) 8(1): 27-36. Dressler R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 84. Hágsater, E., 1993, **New Combinations in *Encyclia* and *Epidendrum***, Orquídea (Mexico City) 13(1-2): 217. 1993.

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EPIDENDRUM TRIPETALUM Hágsater & E.Santiago **Plate 997**

EPIDENDRUM TRIPETALUM Hágsater et E.Santiago, *sp. nov.*

Type: NICARAGUA: Zelaya: Mt. Munsin [Matagalpa: Cerro Musún], 1300 m, 5 II 1971, ***Alfonse H. Heller 11687***. Holotype: SEL 9556! (mounted with an Illustration by Heller) Isotype: SEL 3431! Illustration and personal notes by Heller, SEL!, xerox at AMO! (Illustration based on Heller's illustration.)

Epidendro phragmites Heller & L.O.Williams simile sed planta pendenti, foliis fere parallelis ad caulis axem, inflorescentia uniflora, labello lineari-oblanceolato, carinam singularem angustam ferenti, ovario fere omnino exposito.

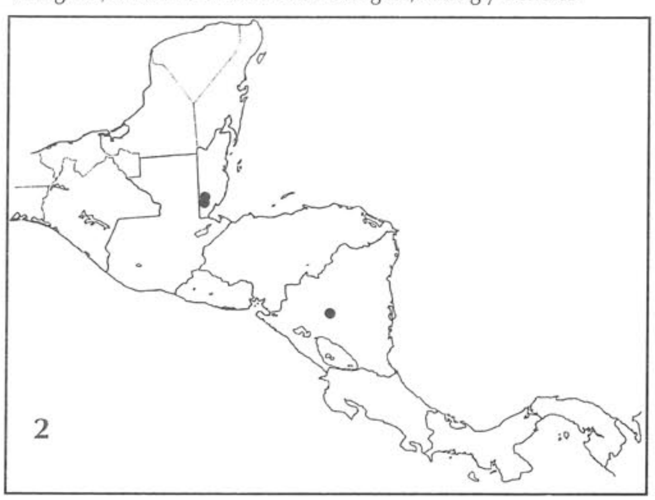
Hierba epífita, simpodial, cespitosa, colgante, 46-80 cm de alto. **Raíces** basales, carnosas, delgadas, 0.5-2.5 mm de grosor. **Tallos** tipo caña, sencillos, teretes en la base a ligeramente aplanados arriba, delgados, rectos, ca. 46-80 x 0.3-0.6 cm. **Hojas** 10-14, distribuidas a lo largo del tallo, articuladas, alternas, suberectas; los tallos cubiertos en su totalidad por vainas (las inferiores no foliares), tubulares, rugosas, 1.5-4 cm de largo; lámina ovado lanceolada, subaguda, desigualmente bilobada, subcoriácea, margen ligeramente revoluto, 3.5-9 x 1-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencias** laterales, numerosas, unifloras, producidas en la base de las vainas foliares, opuestas a la base de la lámina, subsésiles; pedúnculo muy corto, ca. 2 mm de largo, oculto en su totalidad por 3 brácteas cortas, tubulares, subagudas, imbricadas, 3-4 mm de largo. **Bráctea floral** más corta que el ovario, muy semejante a las brácteas del pedúnculo, pequeña, tubular, subaguda, 4 mm de largo. **Flores** 1, de color blanco verdoso; sin datos de fragancia. **Ovario** terete, grueso, 10 mm de largo. **Sépalos** entreabiertos, libres, triangular lanceolados, carnosos, el ápice subacuminado, 3-nervados, margen entero, extendido, 10 x 3 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, linear oblanceolados, agudos, 3-nervados, margen entero, extendido, 9 x 1.8 mm. **Labelo** unido a la columna, entero, unguiculado, linear oblanceolado, cortamente acuminado, margen entero, 10 x 2 mm; bicalloso, los callos delgados, incipientes, bajos; disco unicarinado, la carina delgada que se desvanece antes de llegar al ápice de la lámina. **Columna** muy corta, gruesa, el clinandrio arqueado hacia arriba. **Clinandrio** muy prominente, sobrepasando el cuerpo de la columna, casi tan largo como el cuerpo de la columna, semitubular, margen dentado. **Antera** subreniforme, verticalmente acanalada, 4 locular. **Polinios** 4. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** y **Nectario** no vistos. **Cápsula** elipsoide, cuerpo 14 x 8 mm; pedicelo 6 mm de largo; cuello apical ausente.

Epiphytic, sympodial, caespitose, hanging **herb. Roots** basal, fleshy, thin. **Stems** cane-like, simple, terete at the base, slightly compressed above, thin, straight. **Leaves** 10-14, distributed throughout the stem, articulate, alternate, suberect; the stems covered by tubular, rugose sheaths (the lower ones non-foliaceous); blade ovate-lanceolate, subacute, unequally bilobed, subcoriaceous. **Inflorescences** lateral, one-flowered, subsessile; peduncle very short, totally hidden by 3 short, tubular, imbricating sheaths. **Floral bracts** shorter than the ovary, similar to the bracts of the peduncle. **Flower** single, greenish white. **Ovary** terete, thick. **Sepals** partly spreading, free, triangular-lanceolate, apex subacuminate, 3-veined; the lateral sepals slightly oblique. **Petals** partly spreading, free, linear-oblanceolate, acute, 3-veined, narrower than the sepals. **Lip** united to the column, entire, unguiculate, linear-oblanceolate, short-acuminate, margin entire; bicallose, the calli thin, small, low; disc one-keeled, the keel thin. **Column** very short, thick, the clinandrium-hood turned upwards. **Clinandrium-hood** very prominent, surpassing the body of the column, semitubular, margin dentate. **Anther** subreniform, vertically sulcate, 4-celled. **Pollinia** 4. **Rostellum** apical, slit. **Capsule** ellipsoid, with a short pedicel.

OTHER SPECIMENS: BELIZE: Toledo: SW Maya Mountains, Columbia River Forest Reserve, 750 m, 13-14 IV 1992, *Holst 4431*, MO! Ibid. Little Quartz Ridge, middle slopes on southern flank N of Camp 2, 800-900 m, 16 II 1997, *Holst 5793*, MO!

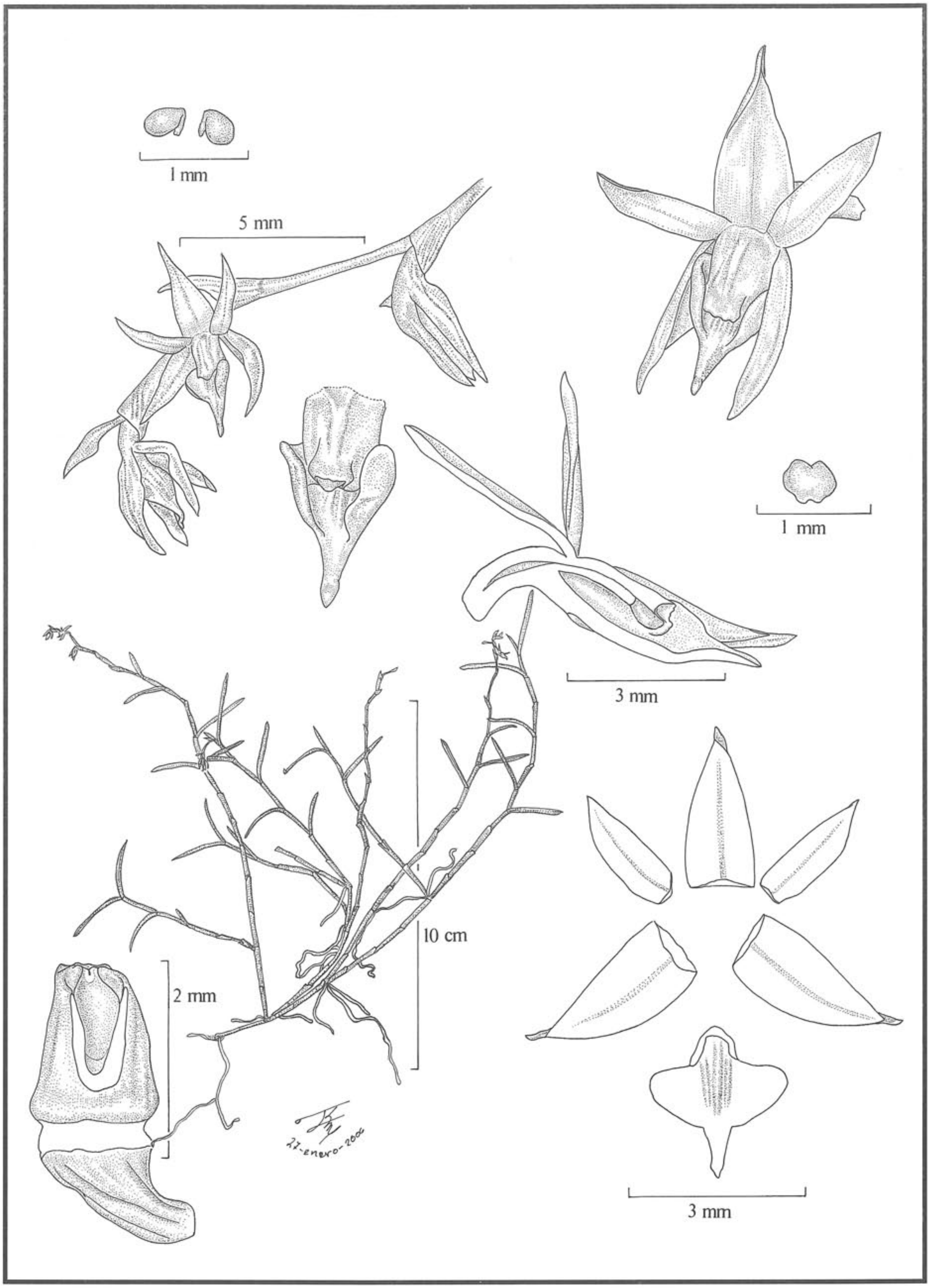
DISTRIBUTION AND ECOLOGY: Known from Caribbean hills of Nicaragua and Belize, at about 750-1300 m altitude. Flowering in February. Fruiting in April.

RECOGNITION: *Epidendrum tripetalum* belongs to the Pleuranthium Group, characterized by the caespitose habit, cane-like and elongate stems, several short, lateral inflorescences, and the Phragmites Subgroup which has non-branching stems, subsessile, 1 or 2 flowered inflorescences, the flowers green or yellowish green, the ovary somewhat inflated and nearly hidden by 3-4 tubular, imbricating bracts. The species is recognized by the stems with ovate-lanceolate, suberect leaves, a single flowered inflorescence, sepals triangular-lanceolate, subacuminate (10 mm long), linear-oblanceolate lip similar to the petals with a thin keel, and the elongate, semitubular clinandrium-hood much surpassing the body of the column. *Epidendrum phragmites* has spreading, ovate-elliptic to ovate-lanceolate leaves, the inflorescence generally two-flowered, and the lip ovate to rarely 3-lobed, with a thick, very fleshy keel. *Epidendrum leonii* D.E. Benn. & Christenson has much shorter plants (28-35 cm tall), with lanceolate, acute, leaves, a 2-flowered inflorescence the lip clearly 3-lobed, the midlobe triangular, the clinandrium-hood elongate, strongly dentate.



CONSERVATION STATUS: DD. Data deficient. Cerro Musún is a Natural Reserve.

ETYMOLOGY: From the Greek τρις, three, and πεταλον, in modern botany petal, in reference to the similarity between the petals and the lip, which distinguishes this species.



EPIDENDRUM TRITROPIANTHUM Hágsater & E.Santiago **Plate 998**

EPIDENDRUM TRITROPIANTHUM Hágsater *et* E.Santiago, *sp. nov.*

Type: COSTA RICA: Heredia: Parque Nacional Braulio Carrillo, NW slope of V[olcán] Barva, E of Refugio, 2100 m, 20 XI 1990, ***Stephen Ingram & Karen Ferrell 743.*** Holotype: INB ex AMO 15260! (Illustration voucher.) Isotypes: AMO 15259! F 2125929! SEL! in part, the thin-leaved specimen mounted on the right; the left-hand specimen corresponds to *E. paranthicum* Rchb.f. The specimen at USJ 37734! is also *E. paranthicum*.

Epidendro paranthico Rchb.f. simile sed petalis patentibus, floribus albis sed purpureo-rubello ad lobulorum lateralium margem, labello ecalloso cum 3 carinis humilibus.

Hierba epífita, simpodial, escandente, 13 cm de alto. **Raíces** en la base de cada tallo, escasas, filiformes, blancas, 0.2-0.4 mm de grosor. **Tallos** sencillos, producidos de los entrenudos basales de tallos anteriores, tipo caña, teretes, muy delgados, erectos, 7-10 x 0.02-0.08 cm. **Hojas** 5-8, distribuidas en la zona media apical del tallo, alternas, articuladas, algo carnosas, erecto extendidas; vaina tubular, finamente estriada, 4-9 x 0.2-0.8 mm; con una lígula muy pequeña del lado opuesto de la lámina, triangular, aguda, conduplicada, 1 mm de largo; lámina acicular, aguda, margen entero, 4-20 x 0.5-1 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, dística, secundiflora, pauciflora, laxa, erecta, 3-3.3 cm de largo; pedúnculo lateralmente aplanado, recto, filiforme, 11-14 mm de largo; provisto en la parte media de una bráctea semejante a las florales, linear lanceolada, subaguda, abrazadora, 4 mm de largo; raquis algo sinuoso. **Brácteas florales** algo más largas que el ovario, anchamente triangulares, agudas, amplexicaules, 2-3 mm de largo. **Ovario** terete, delgado, no inflado, liso, 1.5 mm de largo. **Flores** 3-7, sucesivas, resupinadas, dísticas, segmentos florales blancos con el ápice verdoso, lóbulos laterales del labelo púrpura rojizos; sin datos de fragancia. **Sépalos** libres, ovado triangulares, agudos, con una quilla dorsal prominente, 1-nervados, margen entero, extendido, 2.7-3 x 1.2 mm; el **dorsal** algo reflexo; los **laterales** entreabiertos, paralelos a la columna, oblicuos. **Pétalos** extendidos, libres, oblongo ovados, agudos, 1-nervados, margen entero, 2.2 x 0.7 mm. **Labelo** unido a la columna, 3-lobado, base truncada, margen entero, 2 x 2.4 mm; ecalloso, disco con 3 quillas bajas; lóbulos laterales insertados cerca de la base de la columna, oblicuamente triangulares, redondeados, abrazando a la columna en posición natural (sin envolverla por completo) 1 x 1 mm; lóbulo medio angostamente triangular, agudo, 1 x 0.4 mm. **Columna** corta, recta, gruesa, 2 mm de largo. **Clinandrio** corto, margen crenulado. **Antera** reniforme, 2-locular. **Polinios** 2, obovoides, caudículas algo granulosas, más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** sin penetrar el ovario, no inflado, no ornamentado. **Cápsula** no vista.

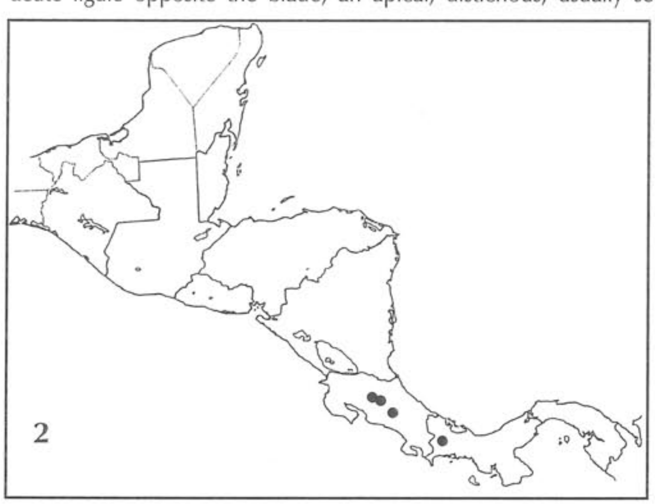
Epiphytic, sympodial, scandent **herb. Roots** originating from the base of the stem, scarce, filiform, white. **Stems** simple, produced from the basal internodes of the previous stems, cane-like, terete, very thin, erect. **Leaves** 5-8, distributed throughout the apical half of the stem, alternate, articulate, more or less fleshy, erect-spreading; sheath tubular, minutely striated, with a small ligule, narrowly triangular, acute, opposite the blade; blade acicular, acute, margin entire. **Inflorescence** apical, flowering only once, racemose, secund, lax, few-flowered, erect; peduncle laterally compressed, straight, filiform, provided in the middle with a bract similar to the floral bracts; rachis sinuous. **Floral bracts** somewhat longer than the ovary, widely triangular, acute, amplexicaule. **Ovary** terete, thin, not inflated, smooth. **Flowers** 3-7, successive, resupinate, distichous, floral segments white, the apex greenish, lateral lobes of the lip reddish purple. **Sepals** free, ovate-triangular, acute, with a prominent, dorsal keel, 1-veined, margin entire, spreading, the dorsal sepals somewhat reflexed, the lateral sepals partly spreading, parallel to the column, oblique. **Petals** spreading, free, oblong-ovate, acute, 1-veined, margin entire. **Lip** united to the column, 3-lobed, base truncate, margin entire; ecallose, disc with 3 low keels; lateral lobes inserted near the base of the column, obliquely triangular, rounded, embracing the column in natural position, without covering it; midlobe narrowly triangular, acute. **Column** short, straight, thick. **Clinandrium-hood** short, margin crenulate. **Anther** reniform, 2-celled. **Pollinia** 2, obovoid, caudicles somewhat granulose, shorter than the pollinia. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: COSTA RICA: Cartago: Tapantí, 20 VI 1987, *Achí OA-8*, USJ! **Heredia:** cerca de Varablanca, 5 XII 1984, *Dressler 263*, USJ!

OTHER RECORDS: PANAMA: Chiriquí: Guadalupe, XII 1977, *Dressler s.n.*, color slide published as *Epidanthus paranthicus* (Rchb.f.) L.O.Williams, (Dressler, 1983).

DISTRIBUTION AND ECOLOGY: Known from the Cordillera Central in Costa Rica and western Panama, epiphytic in moss, in cloud forest at 2100 m altitude. Flowering in June to December.

RECOGNITION: *Epidendrum tritropianthum* belongs to the Epidanthus Group, which is characterized by short small, somewhat scandent plants with very thin stems, very narrow, more or less fleshy leaves, with a small, narrowly triangular, acute ligule opposite the blade, an apical, distichous, usually secund inflorescence, and 2 or 4 pollinia. The species is recognized by the white flowers with the lateral lobes of the lip reddish purple, the petals spreading, sepals and petals 1-veined, and the lip ecallose with 3 low keels. *Epidendrum paranthicum* has white flowers with a yellow lip, or, yellow to greenish yellow flowers, or reddish-brown, sometimes dotted flowers, the petals slightly reflexed and the lip with an evident semicircular callus. *Epidendrum talamancanum* (Atwood) Mora Retana & J.García has much larger plants, longer leaves (0.9-3.2 cm long), the flowers usually cream colored or white, occasionally tinged purple, the sepals and petals 3-veined, 4.2-7 mm long sepals reflexed, and the lip with a single, minutely apiculate callus.

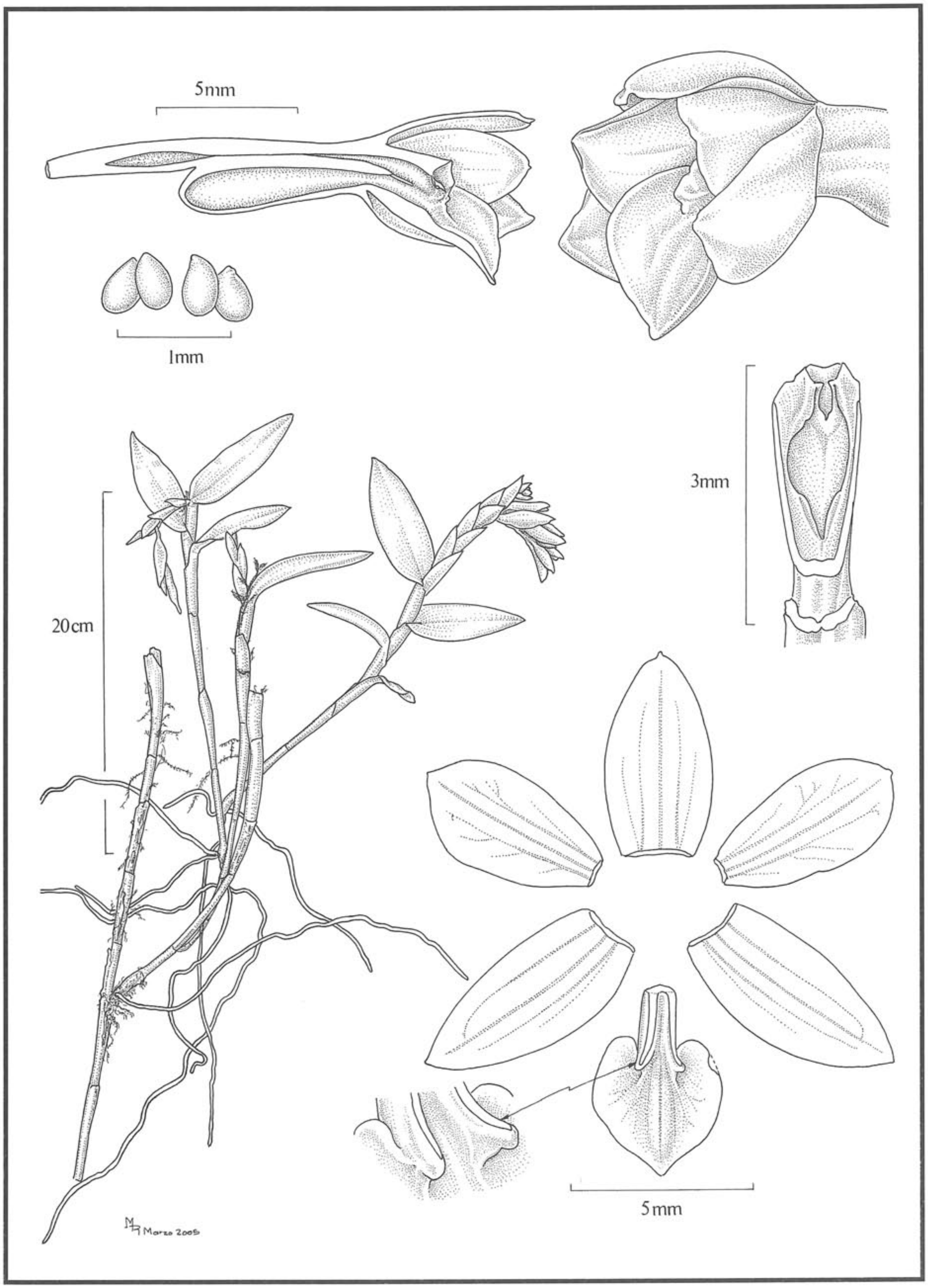


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek τρις, three, στροπις, keel, and ανθος, flower, in reference to the 3 keels of the lip, which characterize this species from other members of the Epidanthus Group.

REFERENCES: Barringer, K., 1991, **A revision of *Epidendrum* subgenus *Epidanthus* (Orchidaceae),** Britonia 43(4): 247-248. Dressler, R. L., 1983, **Epidanthus ¿será o no será? *Epidanthus crassus*, una nueva especie de Panamá,** Orquídea (Méx.) 9(1): 13-19.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**



EPIDENDRUM VULCANICOLA Heller

Plate 999

EPIDENDRUM VULCANICOLA Heller, Fieldiana, Bot. 32: 8. 1968.

Type: NICARAGUA: Rivas: Madera Volcano, Ometepe Island in Lake Nicaragua, 1260 m, April 1963, ***Heller 8012.*** Holotype: F 1647984! Isotype: F 1644363! Colored sketch of the pretype, K!

Hierba epífita, de simpodio rastrero, suberecta, de crecimiento sucesivo lateral; 50 cm de alto. **Raíces** carnosas, delgadas, escasas, distribuidas a lo largo de los entrenudos basales. **Tallos** sencillos, tipo caña, teretes, delgados; 30 x 0.2-0.4 cm; la parte basal cubierta por vainas tubulares, escariosas y fibrosas con el tiempo. **Hojas** 4-5, distribuidas a lo largo de la mitad apical del tallo, alternas, articuladas; vainas tubulares, lisas; lámina elíptica, aguda, coriácea, margen entero; 3-7 x 1-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, pauciflora, racemosa, dística, ligeramente arqueada, 6 cm de largo; pedúnculo corto; 3.5 cm de largo; oculto en su totalidad por 4 brácteas semejantes a las florales, angostamente ovadas, agudas, conduplicadas, imbricadas, glumáceas, teñidas de rosado; 10-13 mm de largo; raquis en zigzag; 2.5 cm de largo. **Brácteas florales** mucho más largas que el ovario, las apicales progresivamente más cortas, angostamente ovadas, agudas, conduplicadas, amplexicaules; 8-10 mm de largo. **Flores** 3-5, sucesivas, resupinadas, de color rosado a lila intenso, sin datos de fragancia. **Ovario** recto, terete, delgado, liso, no ornamentado, inflado ventralmente en la mitad apical, formando un espolón prominente; 5 mm de largo. **Sépalos** entreabiertos, libres, agudos, 3-nervados, margen extendido, entero; 6 x 2.5 mm; el **dorsal** oblongo oblanceolado; los **laterales** ovados, ligeramente oblicuos. **Pétalos** entreabiertos, libres, angostamente elípticos, agudos, 1-3-nervados, margen entero; 6 x 2.3 mm. **Labelo** unido a la columna, entero, cordiforme, agudo, margen extendido, entero; 4 x 3.8 mm; bicalloso, los callos pequeños, láminares, cortos, divergentes; disco tricarinado, las carinas muy delgadas, lisas, bajas, la central alargada hasta el ápice de la lámina, el par lateral más corto. **Columna** corta, recta, gruesa; 3 mm de largo. **Clinandrio** corto, margen serrulado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando 1/2 del ovario y formando un espolón prominente, no ornamentado. **Cápsula** no vista.

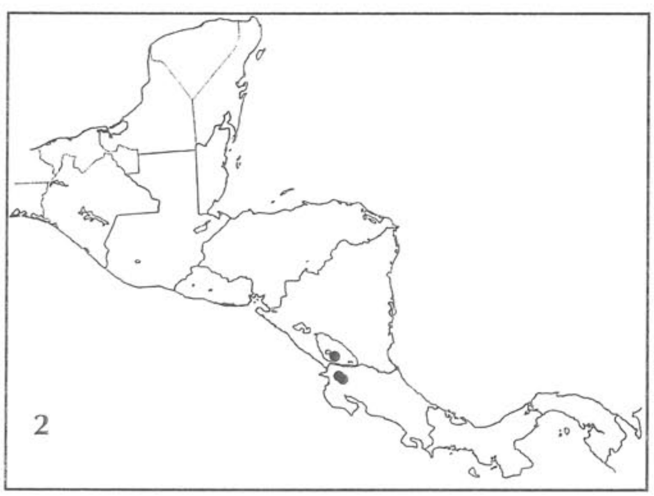
Epiphytic, sympodial, suberect **herb** with successive lateral growth. **Roots** scarce, fleshy, thin, distributed along the lower internodes of the stem. **Stems** simple, cane-like, terete, thin; the basal half covered by tubular, scarious sheaths, becoming fibrous with time. **Leaves** 4-5, distributed along the apical half of the stem, alternate, articulate; sheaths tubular, smooth; blade elliptic, acute, coriaceous, margin entire. **Inflorescence** apical, flowering only once, few-flowered, racemose, distichous, slightly arching; peduncle short, totally covered by 4 imbricating bracts similar to the floral bracts, tinged pink; rachis zigzag. **Floral bracts** much longer than the ovary, the apical ones progressively shorter, narrowly ovate, acute, conduplicate, amplexicaul, glumaceous. **Flowers** 3-5, successive, resupinate, pink to intense lilac colored. **Ovary** straight, terete, thin, smooth, ventrally inflated along the apical half to form a prominent spur. **Sepals** partly spreading, free, acute, 3-veined, margin spreading, entire, the dorsal sepal oblong-oblanceolate, the lateral sepals ovate, slightly oblique. **Petals** partly spreading, narrowly elliptic, acute, 1-3-veined, margin entire. **Lip** united to the column, entire, cordiform, acute, margin spreading, entire; bicallose, the calli small, short, divergent; disc tricarinate, the central keel elongate, reaching the apex of the lip, the lateral pair shorter. **Column** short, straight, thick. **Clinandrium-hood** short, margin serrulate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating half the ovary and forming a prominent spur, smooth.

OTHER SPECIMEN: COSTA RICA: Guanacaste: Parque Nacional Guanacaste, Estación Cacao, 1100 m, 3 VI 1990, *Alcázar 56*, USJ! Parque Nacional Guanacaste, Estación Pitilla, 900 m, 26 V 1990, *Herrera 3932*, MO! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Known only from the low mountains in and between Lake Nicaragua and the Pacific Ocean, and the Paque Nacional Guanacaste. Epiphyte in mossy cloud forest, at 900-1260 m altitude. Flowering April to June.

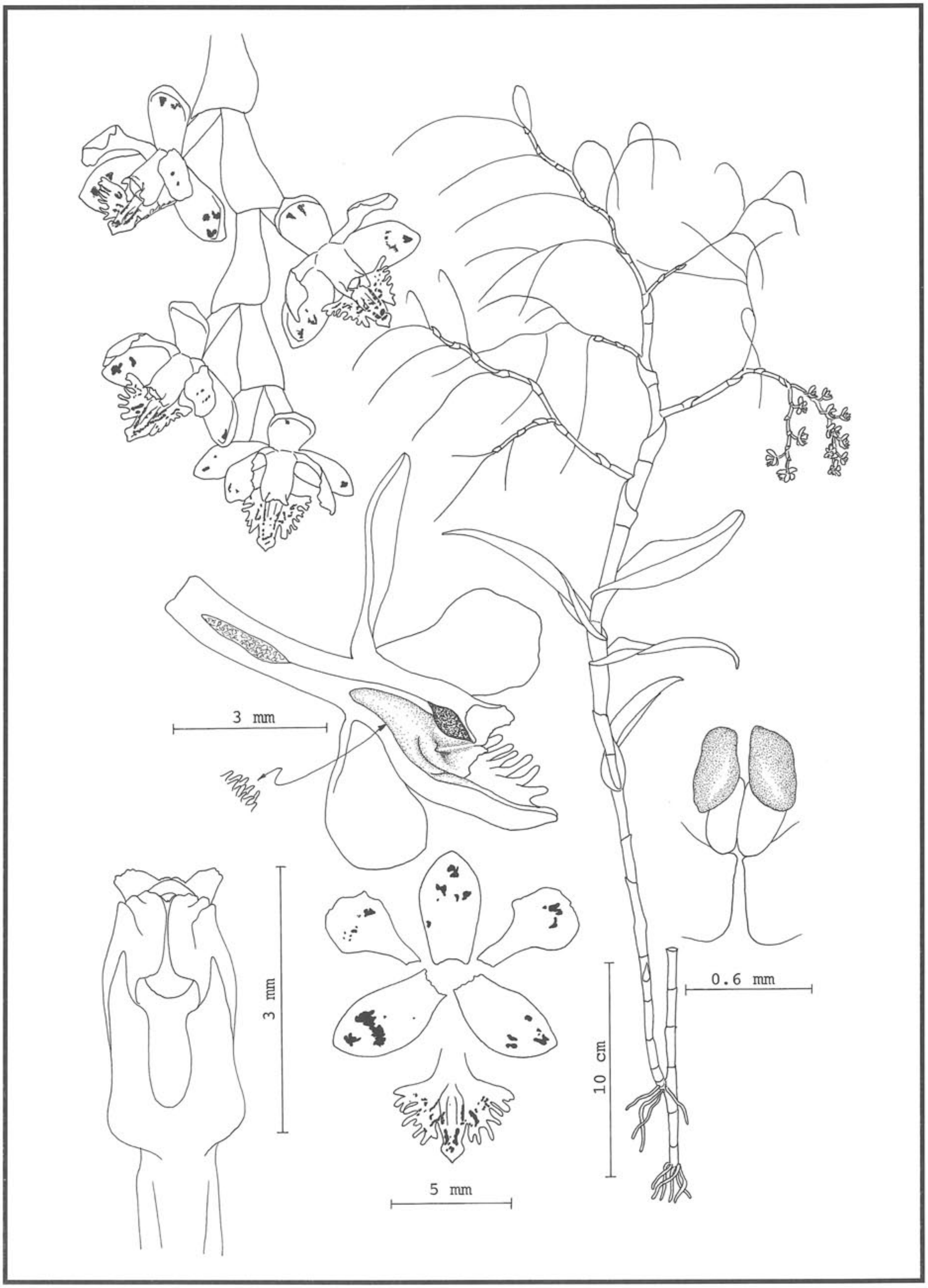
RECOGNITION: *Epidendrum vulcanicola* belongs to the Polychlamys Group, Polychlamys Subgroup which is characterized by the successive lateral growths, the distichous, apical inflorescence with prominent, conduplicate, acute, glumaceous floral bracts. The species is distinguished by the few-flowered inflorescence, small (sepals 6 mm long), pink to intense lilac flowers, cordiform, bicallose lip with 3 low keels and the nectary forming a prominent spur, separating somewhat from the ovary. *Epidendrum sigmoideum* Hágsater has successive, green flowers, sepals 8.5-10 mm long, a reniform lip and a sigmoid ovary with the nectary forming a prominent vesicle which does not form a spur. *Epidendrum lutheri* Hágsater, has a lax inflorescence with 5-9, large (sepals 13-15 mm long), green to chocolate-green flowers, the lip oblong and the ovary forming a prominent vesicle which does not form a spur. *Epidendrum barbae* Rchb.f. has showy, yellow or greenish yellow flowers (sepals 10-11 mm long), the lip suborbicular-obovate and the nectary forms a prominent spur which is basally free from the ovary.

CONSERVATION STATUS: DD. Data deficient. Found in the Parque Nacional Guanacaste.



ETYMOLOGY: From volcano and the Latin ending –*cola*, dweller of volcanoes, in reference to the type having been collected on a volcano.

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Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM WERCKLEI Schltr. **Plate 1000**

EPIDENDRUM WERCKLEI Schltr., Repert. Spec. Nov. Regni Veg. Beih. 3: 48, 1906.

Type: COSTA RICA: [San José:] Bei [Alto de] La Palma, ca. 1500 m, October 1902, ***C. Wercklé 16419.*** Holotype: B, destroyed. Sketch of flower published in Mansfeld, Repert. Spec. Nov. Regni Veg. Beih. 59(2): t. 59, no. 234. 1931.
Synonyms: *Epidanthus wercklei* (Schltr.) Garay, Orch. Digest. 41(1): 22. 1977.
Neowilliamsia wercklei (Schltr.) Dressler, Orquídea (Méx.) 8(1): 29. 1981.

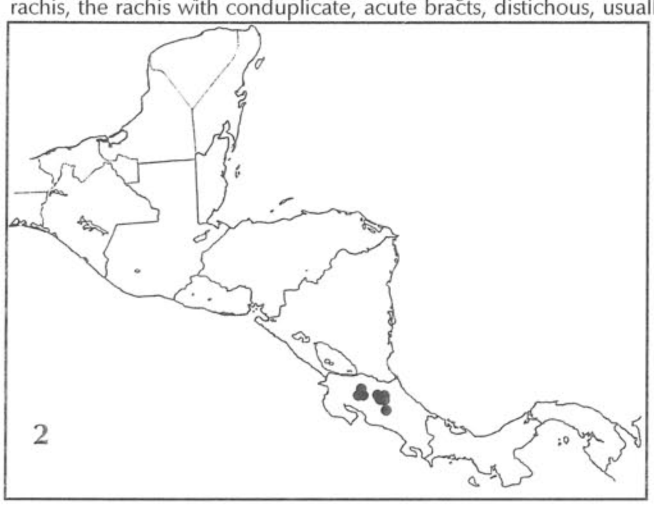
Hierba epífita, simpodial, escandente, de 40-85 cm de alto. **Raíces** originandose a lo largo de los entrenudos basales de cada tallo, escasas, delgadas, 0.3-1 mm de grosor. **Tallos** sencillos, producidos de un entrenudo inferior del tallo anterior, tipo caña, teretes en la base y lateralmente aplanados arriba, delgados, erectos, rectos, 18-30 x 0.2-0.6 cm; la parte inferior cubierta por vainas tubulares no foliáceas, blanquecinas, fibrosas con el tiempo, 2-5 cm de largo. **Hojas** hasta 9, distribuidas en la zona media apical de los tallos, las basales generalmente caedizas, suberectas, alternas, articuladas; vaina tubular, lateralmente comprimida, ancipitosa, finamente estriada, 1-6 x 0.2-0.6 cm; lámina elíptico-lanceolada, aguda, diminutamente apiculada, coriácea, margen entero, 2.5-9.5 x [0.5] 1-1.8 cm; con una lígula del lado opuesto de la lámina, triangular, subaguda, 0.6 mm de largo **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, pluriflora, florece una sola vez, 11-22 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, recto, 3.7-11 cm de largo, provisto en la parte media de 1 a 2 brácteas, ancipitosa, tubular en la base, conduplicada en el ápice, aguda, 1.4-2.6 mm de largo; raquis fractiflexo, ancipitoso, 7-15 cm de largo. **Brácteas florales** de 1/3 del largo del ovario, deltoides, agudas, amplexicaules, ancipitosas, 2.5-4 mm de largo. **Ovario** terete, delgado, no inflado, liso, 5-7 mm de largo. **Flores** 22-60 [150], simultáneas, secundas, no resupinadas, carnosas, sépalos y pétalos blancos a crema verdosos con pocas a muchas manchas pardo purpúreas; fragancia a coco. **Sépalos** extendidos, libres, obovados, ápice redondeado a subagudo, diminutamente apiculado, 5-nervados, ligeramente cóncavos en la mitad apical, margen entero, [4.6] 6-7 x 2.6-4 mm; los **laterales** algo oblicuos. **Pétalos** entreabiertos, libres, cuneado espatulados, ápice redondeado, diminutamente apiculado, ligeramente cóncavos en la mitad apical, 3-nervados, ocasionalmente las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen extendido, entero, [4.6] 6 x 2.6-3.6 mm. **Labelo** unido a la columna, trilobado, carnoso, cóncavo, triangular a flabeliforme al extenderse, 4-5 x 5-8 mm; ecalloso, disco provisto de 3 quillas, carnosas, delgadas, la central algo más baja, el par lateral alargado hasta la base del lóbulo medio; lóbulos laterales triangulares, divididos en 8-9 lóbulos digitiformes, [1.7] 3-3.5 x [2.5] 3.5-4.5 mm; lóbulo medio cuneado en la base y rómbico en el ápice, diminutamente apiculado, margen entero, mucho mas pequeño que los lóbulos laterales, 1.7-2 x 1-1.5 mm. **Columna** recta, gradualmente más amplia hacia el ápice, 3 mm de largo. **Clinandrio** sobrepasando levemente el cuerpo de la columna, entero, margen eroso. **Antera** obovoide, 2-locular. **Polinios** 2, obovoides, lateralmente aplanados; caudículas laminares, duras, casi tan largas como los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** corto, sin penetrar el ovario, angosto, pubescente. **Cápsula** elipsoidal, pedicelo, 4-5 mm de largo; cuerpo 18 x 7 mm; cuello apical muy corto (con el perianto persistente), ca. 2 mm de largo.

Epiphytic, sympodial, scandent **herb. Roots** originating from the basal internodes of each stem, scarce, thin. **Stems** simple, produced from a lower internodes of the previous stem, cane-like, terete towards the base, laterally compressed above, thin, erect, straight; the lower part covered by tubular, non-foliaceous sheaths, becoming fibrous with time. **Leaves** up to 9, distributed throughout the apical half of the stem, the lowers ones usually deciduous, suberect, alternate, articulate; sheath tubular, laterally compressed, ancipitose, minutely striated; blade elliptic-lanceolate, acute, minutely apiculate, coriaceous, margin entire; with a ligule opposite the blade, triangular, subacute. **Inflorescence** apical, paniculate, erect, many-flowered, flowering only once; peduncle laterally compressed, ancipitose, straight, provided towards the middle with 1-2 ancipitose, acute bracts, tubular at the base, conduplicate above; rachis fractiflex, ancipitose. **Floral bracts** 1/3 the length of the ovary, deltoid, acute, ancipitose. **Ovary** terete, thin, not inflated, smooth. **Flowers** 22-60 [150], simultaneous, secund, non-resupinate, fleshy, sepals and petals white to greenish cream colored, with few to many purple-brown spots; fragrant of coconut. **Sepals** spreading, free, obovate, apex rounded to subacute, minutely apiculate, 5-veined, apical half slightly concave, margin entire, the lateral sepals somewhat oblique. **Petals** partly spreading, free, cuneate-spatulate, apex rounded, minutely apiculate, the apical half somewhat concave, 3-veined, the lateral veins occasionally branching and thus appearing 5-veined, margin spreading, entire. **Lip** united to the column, 3-lobed, fleshy, concave, triangular, somewhat flabellate in outline when spread; ecallose, disc with 3 fleshy, thin keels, the mid-keel lower, the lateral keels elongate as far as the base of the midlobe; lateral lobes triangular, divided into 8-9 digitiform lobes; midlobe cuneate at the base, rhombic above, minutely apiculate, margin entire, much smaller than the lateral lobes. **Column** straight, gradually higher towards the apex. **Clinandrium-hood** somewhat longer than the body of the column, entire, margin erose. **Anther** obovoid, 2-celled. **Pollinia** 2, obovoid, laterally compressed; caudicles laminar, hard, nearly as long as the pollinia, viscidium semiliquid. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, narrow, pubescent. **Capsule** ellipsoid, with a pedicel and a very short apical neck, perianth persistent.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to the continental divide along the Cordillera Central and western end of the Cordillera de Talamanca in central Costa Rica, at 1500-1830 m altitude, epiphytic in cloud forest. Flowering from August to November, January. In fruit in February and March.

RECOGNITION: *Epidendrum wercklei* belongs to the Neowilliamsia Group, characterized by the ancipitose stems and rachis, the rachis with conduplicate, acute bracts, distichous, usually non-resupinate flowers, the lip often digitate and the 2 or 4 pollinia with 2 hard, laminar, caudicles. The species is recognized for its large many-flowered panicle of white to greenish cream-colored flowers with purple-brown spots and the lateral lobes of the lip deeply divided into 8-9 finger-like lobes, a narrow nectary and 2 pollinia. *Epidendrum phylowercklei* Hágsater & E.Santiago from the border of Panama and Costa Rica is vegetatively very similar but the flowers are yellowish green to ochre-yellow with transverse reddish brown bars and the column forming a vertically wide structure with the claw of the lip and a wide, rounded nectary. *Epidendrum alfaroi* Ames & C.Schweinf. has shorter plants (up to 30 cm tall) with a generally racemose inflorescence of up to 13, yellowish orange to greenish white flowers spotted with brown, and 4 pollinia.



CONSERVATION STATUS: DD. Data deficient. Apparently locally widespread and relatively common.

ETYMOLOGY: Named in honor of Karl Wercklé, who collected in central Costa Rica between 1897 and his death in 1924. His material is deposited in CR. Fifteen species have been dedicated to him, mainly by Rudolf Schlechter.

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